Logical Philosophy

A Compendium

Avi Sion PH.D.

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Abstract

Logical Philosophy: A Compendium brings together five works by Avi Sion published in 2002-06, namely: *Phenomenology* (2003), *Volition and Allied Causal Concepts* (2004), *Meditations* (2006), *Ruminations* (2005), and *Buddhist Illogic* (2002).

These works together define what may be termed 'Logical Philosophy', i.e. philosophical discourse distinguished by its steadfast reliance on inductive and deductive logic to resolve epistemological and ontological issues.

Note that the works are placed in a logical rather than chronological order. This collection does not include work done on *The Logic of Causation* in the same period (published in 2003, 2005).

Other works by Avi Sion (photo) include:

Future Logic: Categorical and Conditional Deduction and Induction of the Natural, Temporal, Extensional and Logical Modalities. Revised ed. Geneva: Author, 1996.[1]

Judaic Logic: A Formal Analysis of Biblical, Talmudic and Rabbinic Logic. Geneva: Author, 1995.[2]

The Logic of Causation. Rev. & exp. ed. Geneva: Author, 2010.[3]

Logical and Spiritual Reflections. Rev. & exp. ed. Geneva: Author, 2009.[4]

A Fortiori Logic: Innovations, History and Assessments. Geneva: Author, 2013.

All of these works may be consulted on the Internet, at:
www.TheLogician.net.

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1 First published by author in Vancouver, B.C., 1990.
2 Published thereafter by Editions Slatkine in Geneva, 1997.
3 First published by author in Geneva, 1999. The first edition comprised only Phase I (Macroanalysis); the second edition (2003) added Phase II (Microanalysis); the third edition added Phase III (Software Assisted Analysis).
4 First published by author in Geneva, 2008.

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PHENOMENOLOGY

Basing Knowledge on Appearance

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Abstract

Phenomenology is the study of appearance as such. It is a branch of both Ontology and Epistemology, since appearing is being known.

By an ‘appearance’ is meant any existent which impinges on consciousness, anything cognized, irrespective of any judgment as to whether it be ‘real’ or ‘illusory.’ The evaluation of a particular appearance as a reality or an illusion is a complex process, involving inductive and deductive logical principles and activities. Opinion has to earn the status of strict knowledge.

Knowledge develops from appearances, which may be: (a) objects of perception, i.e. concrete phenomena in the physical or mental domains; (b) objects of intuition, i.e. one’s subjective self, cognitions, volitions and valuations (non-phenomenal concretes); and/or (c) objects of conception, i.e. simple or complex abstracts of preceding appearances. Abstraction relies on apprehensions of sameness and difference between appearances (including received or projected appearances, and projected negations of appearances). Coherence in knowledge (perceptual, intuitive and conceptual) is maintained by apprehensions of compatibility or incompatibility.

Words facilitate our construction of conceptual knowledge, thanks to their intentionality. The abstract concepts most words intend are common characters or behaviors of particulars (concrete material, mental or subjective experiences). Granting everything in the world is reducible to waves, ‘universals’ would be equalities or proportionalities in the measures of the features, motions and interrelations of particular waves. Such a theory of universals would elucidate sensation and memory.

In attempting to retrace the development of conceptual knowledge from experience, we may refer to certain major organizing principles. It is also important to keep track of the order of things in such development, interrelating specific concepts and specific experiences. By proposing a precise sequence of events, we avoid certain logical fallacies and are challenged to try and answer certain crucial questions in more detail.

Many more topics are discussed in the present collection of essays, including selfhood, adduction and other logical issues, the status of mathematical concepts and theology.

“When wind moves through emptiness,
nothing really moves.”

The Flower Garland Sutra

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1. What, Why and How

1. Phenomenology

Phenomenology may be defined as the study of appearances as such. By an 'appearance' is meant any existent which impinges on consciousness, anything cognized, irrespective of any judgment as to whether it be 'real' or 'illusory.' The evaluation of a particular appearance (an existent within the field of consciousness) as an illusion (existing *only in* consciousness) or a reality (existing *not merely in* consciousness, but also before it, after it, without it or beyond its range) is a complex process, involving inductive and deductive logical principles and activities. Opinion has to earn the status of strict knowledge. To begin with, appearance must be taken neutrally, at face value, as the common ground of reality and illusion (i.e. one of a triad).

> An appearance *is* whatever it *seems to be*. At this level of consideration, the verbs 'to seem' and 'to be' are one and the same. It is only at the next level, where an assessment of status is involved, that they have to be separated.

Since appearing is being known, phenomenology can be regarded as a branch of both Ontology (the study of being as such; or more restrictively, of real being) and Epistemology (the study of knowledge as such; or more restrictively, of true knowledge). Phenomenology differs from ontology in being less presumptive as to the nature or status of the object dealt with, and it is for this reason a study essential to epistemology. The basic insight or premise of phenomenology is that knowledge develops from neutral appearance. The common-sense view of knowledge would seem to be that knowledge develops from data considered *at the outset* as 'sensory,' but as we shall see this view involves logical difficulties. The phenomenological approach is an attempt to overcome these difficulties, and propose a more coherent order of development.

> As I have shown in my work *Future Logic*, no item of apparent knowledge, not even a percept, is ever immediately and definitively 'true' all by itself. An item may initially *seem* to be true, or contain some truth; but it is only in relation to all other items, which likewise *seem* to be true, that the judgment as to whether it is *really* or entirely true can be made. Even the various criteria and tests involved in such terminal judgments are themselves to start with merely seemingly true. The science of phenomenology is built on the same basic insight.

In this volume, we shall understand the term 'appearance' very broadly as including: a) objects of perception, i.e. concrete phenomena in the physical or mental domains; (b) objects of intuition, i.e. one's subjective self, cognitions, volitions and valuations (non-phenomenal concretes); and/or (c) objects of conception, i.e. simple or complex abstracts of preceding appearances. Abstraction relies on apprehensions of sameness and difference between appearances (including received or projected appearances, and projected negations of appearances). Abstracts are firstly simply summaries of information, and at a later stage more complex hypothetical entities. Coherence in knowledge (perceptual, intuitive and conceptual) is maintained by apprehensions of compatibility or incompatibility.

> With regard to terminology, the reader is advised to keep in mind that in philosophy, and in this particular philosophical treatise, we use words somewhat differently or more specifically than in common parlance. Contrary to the impression given by the term 'phenomenology,' it should be understood as a study not merely of 'phenomena,' but of all appearances, including intuited particulars and abstract data[1]. The word

1 There is no point in coining a new term, even though the term phenomenon is in the present volume used in its primary sense of material or mental concrete particular, in contradistinction to intuited objects or abstracts. But note that in practice the term is often used more loosely with reference to complex appearances like 'a social phenomenon' – which include not only concretes, but also intuitive experiences and even abstracts.

'appearance' is often confused with 'illusion,' but here includes 'reality.' It is about equivalent in scope to the term 'object' (content of consciousness) or 'thing' in logic (anything existing or thought of). Note well that here 'experiences' refers not only to the phenomena of physical perception, but includes mental percepts, and even intuited data. In common parlance, the term can be more restrictive (limited to sensory inputs) or even coextensive with 'appearances' (e.g. 'my life experiences' includes my abstract thoughts). And so forth – all terms will be made clear in due course. *See* ***Illustrations*** *at the end of the book.*

Phenomenology is a science based primarily on attentive detailed observation of one's own experience and discursive behavior, and only secondarily on careful logical analysis and ordering of such observations. Thus, practice of *meditation* is a prerequisite to development of this philosophical discipline, and our success in the latter depends on our skills in the former. Although philosophical awareness and thinking are ultimately obstacles to meditation (which rises above intellectual pursuits), the former can in the interim still draw significant lessons from the latter. Labeling phenomena as "phenomena", or making distinctions between them, or distinguishing them from intuitive experiences or from abstractions – such acts are all non-meditative; but they may well occur and be remembered in the course of meditation. (See **Appendix 1**.)

2. Knowledge is Based on Appearance

Our primary consideration ought to be just what is apparent to our awareness at each and every moment. Nothing can be granted offhand except this first given. ***Appearance is immediately granted – because there is nothing else to discuss or refer to, because discourse arises solely in reaction and in relation to it.*** Thereafter, we may stage by stage show how knowledge in general, including our alleged knowledge of those stages, develops.

The core thesis of phenomenology, thus, is that *knowledge is based on appearance*. This is in stark contrast to other approaches to epistemology, which propose that knowledge is based on 'external reality' or on 'subjective truth' or some such premature thesis. Moreover, phenomenology regards as essential that *the sequence in which knowledge arises and develops out of appearance* be clarified. A notion or suggestion may be appropriate if intelligently placed in the 'order of things,' but very misleading if misplaced.

- Consider, for instance, **Naïve Realism** (or Materialism or Objectivism)[2]. This philosophy proposes that we have a body with sense-organs, that when these come in contact with external objects sensations are produced, which in turn produce primary ideas (images) in the mind, which are what we experience and build more complex ideas (abstract concepts) from. At first glance, this thesis may appear obvious and worthy of universal belief. But upon reflection, we see that it leads to serious logical problems. If, as it suggests, ideas 'represent' external reality, how do we know that they indeed 'correspond' to it? If, as this theory implies, all we know are ideas (sense-data and their combinations), *how can we even get to know that there is an external reality at all, let alone a body with sense organs in which our minds reside?* Thus, surprisingly enough, this approach to knowledge is internally inconsistent.
- In reaction to this conundrum, some philosophers have opted for the opposite extreme, a **Mentalism** (or Idealism or Subjectivism)[3]. They have, in fact, accepted the core tenet of Naïve Realism that what we perceive and build knowledge on are mental substances called ideas, while simply dropping its thesis that these ideas originate in physical sensations in response to stimuli from external objects. The trouble with this thesis is that it involves a stolen concept, since it would be hard put to define mentality after having done away with that of materiality. Moreover, it does not really *explain* the mass of data at hand – it merely explains it *away* as illusory happenstance. It does not elucidate why there would appear to be an enormous universe of matter 15 billion years old, composed of innumerable galaxies, stars, atoms, quarks, including on

2 Historically, at least in its modern version in the West, we owe this philosophy to John Locke (English, 1632-1704). The difficulties inherent in it were noticed implicitly by his predecessor René Descartes (French, 1596-1650), and later by the likes of David Hume (Scottish, 1711-76) and Immanuel Kant (German, 1724-1804). Notwithstanding, Naïve Realism has remained a basic belief, and a source of considerable confusion, for many people, including philosophers and scientists.

3 For example, the Yogachara school of Buddhist philosophy.

a small planet called Earth apparent human beings, with apparent bodies, with apparent sense organs. Mentalism just ignores all this, or discards it as sheer fantasy; it does not make it comprehensible. It is therefore incomplete.

Having grasped the problem inherent in the former theory, we might be tempted to opt for the latter, however imperfect, were it not for the possibility of another approach, that of **Phenomenology**, which presents neither the flaw of internal inconsistency nor that of incompleteness. Phenomenology brings together the best in both those theories, while weeding out their faulty elements.

- Phenomenology starts like Mentalism with the *given content of consciousness*, but identifies that content neutrally as 'appearance,' instead of taking up the prejudice that it is something mental (idea). For it must be realized that the concept of mind was built in contrast to that of matter; it has no meaning by itself, and would not have arisen were it not for the concept of matter. Phenomenology therefore posits a concept of appearance, which leaves the question of mind or matter open to begin with, a question to be answered in a larger context.
- Phenomenology ends like Naïve Realism with a belief in matter as well as mind, but it does not get to that thesis in the same manner. The error of Naïve Realism is not essentially its notion of a physical body having sensations that generate ideas, but the fact that it takes this notion for *immediately granted*, treating it effectively as a mere observation. Phenomenology avoids this error by understanding the notion in question as a *hypothetical model*, through which we manage to *organize* appearances into an orderly and consistent whole called knowledge.

Our premise is that the starting point of epistemology is never a blank mind in a social vacuum, but the belief framework of ordinary persons in a given historical and geographical cultural context. Researchers in epistemology are *themselves* such ordinary persons in a given societal climate, with their particular viewpoints, though hopefully outstanding intellectual capacities. Any theory such researchers propose must ultimately convincingly explain the genesis of the ordinary frameworks. Whether the latter are thus wholly justified, or demonstrated to be aberrant to some extent, they can neither be ignored nor entirely rejected without logical absurdity.

> It is worth making a comment here, parenthetically, about the cultural context. A man like me, born in the 20th Century and educated in the West, normally takes the Realist viewpoint for granted, and assumes that everyone else in the world naturally does too. People with an opposite perspective seem at first unnatural (philosophical nitpickers or weirdo mystics), if not nonexistent. But it must be kept in mind that in other regions of the world and in other periods of history, there have been humans who sincerely held very different worldviews (consider animism or shamanism, for instances). One should remain open minded.

3. To Be Or Not To Be

One notable radical difference with ordinary thinking in our place and time is the Buddhist notion that we have no self. The Buddhist outlook stems from the position of Indian philosophy that all that we can cognize are *dharmas*, that is (in a primary sense) concrete phenomena of perception, and eventually (in an enlarged sense) the abstract derivatives thereof. The 'reality' of dharmas was considered 'illusory,' since they were impermanent, without abiding characters; and all the more so, derivative notions about dharmas. The Hindu branch of Indian philosophy opted for the thesis that beyond such elusive existents there is a (more 'real' and 'permanent') spiritual existence (with individual selves or souls, and a universal Self or God). Buddhist philosophy, on the other hand, forked off, denying any such additional existents (on the surface, at least, because they later admit a ground of being, which is known only on the highest level of consciousness). Moreover, some Buddhist schools effectively consider some dharmas as material, whereas others consider all as mental.

Some modern Western thinkers would agree with the no-self position, from a more mechanistic perspective, regarding man as a machine (an organic computer or robot) devoid of soul. René Descartes (17th Century) was the first in the history of Western philosophy to raise the issue of selfhood (or raise it so explicitly and clearly). He inferred (*ergo*) existence of self (*sum*) from existence of cognition (*cogito*). More precise would be to say that we

(at least partly) infer Subject and consciousness from the appearance of Object. Something appears – *to what (whom)?* a Subject! *how?* through consciousness! Some philosophers would consider such reasoning as compulsive, influenced by mere grammatical habit. But in my view, these characterizations are neither just habitual nor deductive certainties; they are inductive *hypotheses*[4] needed to settle certain logical issues.

> The term 'Subject,' by the way, is used as here relative to 'Object,' in the relation called 'consciousness'[5]. In the relation of 'volition,' the same entity is called 'Agent,' versus the 'will' (the act of will or that which is willed). The term 'soul' refers to the common ground of Subject and Agent (as well as affective and other roles). The term 'self' stresses the personality of soul, as distinct from other entities, which lack consciousness, volition and affection. The term 'spirit' stresses the distinct substance of soul, compared to material or mental entities (without at the outset excluding that all three may ultimately be of uniform stuff).

In my view, the issue of self is relatively secondary in importance, in the (re)construction of knowledge from scratch that Descartes was pursuing here. He quite correctly saw that even apparently sensed objects may be dreamed. But he (so far as I know) missed the primary conclusion that 'whether these appearances are reality or illusion, it is at least sure that they are.' *That* ought to have been his main building block. In that case, the second inference becomes 'something appears to be (thus, exists), therefore I and my consciousness of that appearance also exist,' the reverse! But I am perhaps being picky. His '[I][6] think therefore I am' can also in fairness be read as '***things appear therefore I am here seeing them***.' Note also that the 'therefore' implies someone inferring; thus not only experience but also reason are implicit in the insight and statement.

In the present volume, we shall radically diverge from the Buddhist or Western Mechanist theses. It is indeed logical to suppose that if all we can cognize are the concrete physical and imaginary phenomena we perceive, i.e. *visual, auditory, tactile, olfactory or gustatory* manifestations of being, and the abstract ideas we form in relation to those phenomena, then there is no self. For no one can claim to see or hear or touch or smell or taste the self – it has admittedly no *perceptible* qualities. However, the way out of this dilemma is to abandon the underlying dogma (about dharmas), and admit that we have another sort of cognitive relation with the self and its exclusive properties (consciousness, will and valuation) – a direct self-experience that might be called 'intuition.'

This thesis need only be taken as a hypothesis to start with. But it soon, as we shall see, becomes evident that such self-experience is needed and extremely useful in solving a variety of epistemological as well as ontological problems. For examples, how are present memories (of past sensations) distinguished from present sensations? Or how are word intentions known to be intended? Thus, it is not through some arbitrary superstition that self and its functions are established, but through the utility and gradual confirmation of the hypothesis of intuition. Theories of knowledge that ignore or exclude intuition merely seem to manage to stand without it, because they do not explicitly confront certain issues, leaving them tacit and unresolved.

4. The Phenomenological Approach

Phenomenology, then, is a theory of knowledge that (i) lays emphasis on a neutral, noncommittal consideration of the building blocks of knowledge as 'appearances' – meaning all contents of consciousness, without prejudice as to their source or nature – and (ii) seeks out *organizing concepts and principles* that would successfully order this knowledge if proposed in an *appropriate sequence*. We may well propose elements of Realism or Mentalism, provided we do so in a critical manner.

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4 Hypotheses, incidentally, made by the Subject through consciousness.

5 I use capitals for the 'Subject,' and occasionally the 'Object,' of consciousness, to avoid confusion with the subject or object of a proposition, and other ambiguities.

6 I put the 'I' implied in 'cogito' in brackets, so as to stress the verb 'think' as primarily implied. The 'I' is grammatically required at the beginning of that sentence, but logically is intended as given in the 'sum' clause, only after an inference indicated by the 'ergo' conjunction. This remark justifies my reformulation of Descartes statement as "think (thoughts appear), therefore am (they appear to someone, call that me)".

The *basic building blocks* of knowledge include concrete experiences, meaning perceived material and mental phenomena and intuitions relating to self, and the conceived, abstract derivatives of the preceding. How to we proceed from experiences to conceptual knowledge? Among the *prime processes* involved are apprehensions of sameness or difference (comparison and contrast) and of compatibility or incompatibility (confrontation, face-off). These processes make use of a certain amount of imagination, which however does not detract from their impartiality, as we shall try to show. The intent here is to sketch *a phenomenological approach* to such fundamentals of epistemology. That is, we need to depict hypotheses as to how the abstract derives from the phenomenal and intuitive, without any prior assumptions as to the nature of the phenomenal, intuitive or abstract, in a manner that considers appearances *ad hoc*.

Attempts to do this under a Naïve Realist presumption have little credibility in that they assume as given that the observer (me, you) has a 'physical' body, sense organs and a brain, whereas (upon reflection, more critically) these entities and their material substance can only in fact be justified *after* a long analysis and synthesis of all data. The alternative, phenomenological approach avoids this logical difficulty (circularity), by starting without assumptions concerning the nature of phenomena or their status (whether they are real or illusory), and proceeding in an ordered manner from the experiential level to the conceptual level, with reference to convincing cognitive processes. If we thereby arrive at a conclusion justifying the basic assumptions of the naïve view, so well and good; but we do not base our understanding on that view. It is an effect, not a cause of knowledge.

> What matters for us here in phenomenology, to begin with, is *what* is cognized, irrespective of *how* it came to be cognized. Because the 'how' is ultimately just another 'what.' For instance, the common thesis that the visual phenomena appearing before me here and now are the end products of a process of some kind involving physical eyes, constitute in this context an *attempt at explanation*. Taken as a given *ab initio,* it constitutes Naïve Realism. But to say this does not exclude the truth of the thesis as a *final* conclusion.
>
> Note that we say 'naïve,' not so as to intimidate eventual dissenters into following suit, but because there is an unquestioning acceptance, an unawareness of the issues involved, to correct. In our example, the main issue is (simply put) that, just as each act of seeing something requires validation, so the vision of the eyes themselves is itself open to doubt. It is not because our perceptions are occasionally wrong that they need evaluation, but because a lot of what we regard as perceptual is more precisely (at least in part) conceptual.

Phenomenology is the *intelligent* organization of appearances into knowledge. By 'knowledge' is meant loosely, to start with, our opinions and impressions. If these are well organized, they gain the status of knowledge in a strict sense, or 'true' knowledge. If they remain scattered and confused, they are classed as mere opinions and impressions, or 'false' knowledge. Among the basic methodological principles of phenomenology, we may cite the following:

(a) Attention to all appearances in all their details. Awareness that they change and accumulate.
(b) Constructing a theoretical model that takes all appearances into consideration, and does not simply ignore them nor (worse still) contradict them.
(c) The order of things in knowledge proposed by that model must be coherent, as an inappropriate sequence of events can hide or lead to contradictions.
(d) Such an epistemological model is necessarily flexible, open to revision, depending on its adaptation to the current mass of data and insights.
(e) It is not an axiom, but is acknowledged to be an ongoing hypothetical construct, to be 'proved' inductively by virtue of its adherence to the aforesaid reasonable principles (which may of course be viewed as themselves part of the construct).

Many historical philosophical errors have been caused by a failure to consider the order of things in the arising and development of knowledge. This is equally true in matters of detail, as in grand issues.

> For example, the Zeno paradoxes cannot be conceived as proofs that motion is impossible, but only as evidence that our (or Zeno's) initial *concepts* of motion are problematic; for motion is *experientially* manifest before and irrespective of any conceptual deliberation concerning it and all discussion concerning motion arises only in reaction to such experience of it as an attempt to rationally interpret and explicate it.

One of the main purposes of the present essay shall, therefore, be to identify the temporal and logical order of the main items in knowledge, so as to preempt such errors.

2. Organizing Principles

1. The Order of Things

Philosophy cannot answer its basic questions any old how; it must proceed in stages, in such a way that its own assertions and implicit assumptions are equally addressed. If a philosopher does not take account of *the order of things* in his mind or knowledge, he is bound to develop erroneous views. To assess such order, one must trace the complex genesis of important concepts. (See **Figures 1**, **2** and **3**.)

Basic concepts like 'appearance,' 'existence,' 'reality,' 'illusion,' 'experience' and many, many more, are of course well-nigh *impossible to define* in verbal terms. The reason is obvious: definition has to stop somewhere; it cannot go on ad infinitum. Such concepts can at best be partly indicated, by pointing to experiences, partly communicated by negation. They are *nonetheless generally understood*, if only after some verbal clarifications.

One of the principal tasks of philosophy is to ***identify the main organizing concepts or principles***, through which all the information given us in appearance can be summarized, ordered and understood. Some of these subdivide the world of appearance into smaller, variously interactive domains and classes. Others are concepts of number, which make measurement of these various elements of appearance feasible, in the realms of space and time, or in statistical contexts like modality and causation, or in other, more specific issues.

In this context, it would be necessary to hypothesize ***how the distinction arises phenomenologically***. That is to say, are there phenomenal *marks or events* that promote and justify such distinction? For example, is matter simply more vividly manifest than mind, or otherwise evidently qualitatively different, or do we make the distinction with reference to intuitions of our own inner actions, such as looking in the direction of the senses versus looking in the direction of memory or of one's own intentions. As we shall see, my conclusion in many contexts is that phenomenal marks or events are not sufficient differentia, and we must refer to self-experience to explain certain primordial distinctions.

If we proceeded according to the natural or logical 'order of things,' our account of the foundations and development of knowledge would begin with meditation on and discussion of **present Appearance**, by which I mean the totality of appearance, in a given moment or cumulatively over time. Then we would dissect such totality into its **constituent appearances**, in an appropriate order, and investigate the various reasons and ways such distinctions arise, as well as the measurements involved in making them. This is of course an enormous task, and I do not propose to fulfill it exhaustively in the present volume but merely to begin it and thus illustrate it.

> The topics treated in this work cannot be presented in such strictly orderly fashion without losing the reader's interest. Some segments will grab the reader's attention, others may seem tedious; so the writer must gauge what to put where. The important thing is to try and make clear within the text what the correct ordering of information would be. Some topics will barely be mentioned, because they have been or will be dealt with in considerable detail in other works of mine, and I see no point in repeating myself. Nevertheless, some repetition is inevitable, if only in the way of summary, if my discourse is to be understood.

The following are some of the most important *organizing concepts or principles*, which we shall try to elucidate to some extent in the coming pages. This catalog is not intended as exhaustive or systematic, but rather as suggestive and associative.

a) Large concepts:

- Distinction between appearance, existence and reality (and their respective negations); ontology.
- Discerning object, consciousness and subject; epistemology.

b) Analytic concepts:

- Distinction between phenomena (material or mental), intuitive (self and its immediate functions), abstract (concepts about phenomena, intuitives and/or abstracts); comparison, confrontation, verbalization, classification; inductive and deductive logic.
- Distinction between matter, mind and spirit.
    - Matter: surrounding world (atoms and molecules, quarks and stars, fields) and own body (sense and motor organs, brain); physics, physiology.
    - Mind: memories, imaginations, anticipations, mental feelings; psychology.
    - Spirit: self/other; soul, cognition, volition, valuation; psychology, ethics.

c) Concepts of mathematical relation (measurement):

- Discerning number (unit, plurality, proportion); arithmetic (algebra).
- Discerning time (present, past and future), space (distances; adjacent, apart; inner, outer), motion and change (all of which, in matter or mind); chronology, geometry.
- Discerning modality (necessary, actual, potential, and their negations) and causality (spontaneity, causation, volition, influence), in all their modes; statistics, tropology, aetiology.

2. Appearance and Other Large Concepts

By '**appearance**' is meant, first of all, anything and everything – but upon reflection, more specifically anything which 'comes to mind,' by whatever means. This is not a definition, but an indication. The term appearance is too fundamental to be definable without circularity, we can only 'point to' its instances; indeed, whatever we can point to, in any sense of the term (physically with a finger, mentally by projecting a boundary, verbally by defining or intentionally by focusing on), is an appearance. Thus, 'appearance' refers to any object – of consciousness (but of course, 'consciousness' is itself too basic to be definable – see further on).

The concept of appearance differs from that of '**existence**' as of when we assume that *things exist before or after we are aware of them*, and therefore by extrapolation that *things exist that we are never aware of*. This assumption that there are things (existents) we are not conscious of, serves to explain or integrate, among others, the appearance that *things disappear and reappear* (signifying continuity of existence in the interim – granting reliability to memory). It also expresses our belief that *other* selves beside oneself exist (as opposed to solipsism), each of which is aware of (and reports) some things one is not aware of, or unaware of some things one is aware of.

Thus, although the two concepts may initially coincide, at some stage we come to regard *appearance as a subcategory of existence*, implying that whereas all appearances exist, some existents are *not* apparent. Non-apparent existents are, note well, hypothetical; i.e. 'nonappearance' is a word whose content is by definition unknown but not in principle unknowable. Non-existents do not, of course, exist; which means that the word 'nonexistence' has no ideational content, but is just a *verbal* construct by negation (an artifice we use as a sort of garbage can for incoherent hypothetical concepts or propositions).

> We may here also mention, in passing, the subsidiary concept of *actuality*, or 'present existence,' which arises in the specific context of natural modality, to distinguish between potentiality *with* present existence and that *without* present existence.

The concept of appearance likewise to begin with coincides with that of '**reality**.' But as of when we come to the conclusion, as a way to explain certain illogical appearances (like contradictions between experiences or between our beliefs/predictions and experiences) that *some things are illusory*, i.e. that consciousness *errs* occasionally, we posit that *reality is a mere subcategory of appearance, and therefore of existence*. The complementary subcategory of appearance, unreality or '**illusion**,' also has the status of existence, note well. There are also appearances that we are at a given time unable to classify as reality or illusion; these are temporarily *problematic*.

> One cannot claim that *all* appearance is illusion, without thereby contradicting oneself, since such a claim is itself an appearance that is being assumed a reality; it is therefore logically self-evident that *some appearances are realities*.

The *deductive* relation between these concepts is therefore this: appearance is the common ground of reality and illusion, i.e. *implied by both but not implying either*. Reality and illusion are mutually contradictory concepts – both cannot be true/applicable, but one of them must ultimately be so. Thus, every object of awareness can be claimed as appearance offhand, without prejudicing the issue as to whether it is real or illusory.

However, appearance and reality are also *inductively* related, as follows: *every appearance may be assumed a reality unless (or until, if ever) it is judged (for logical reasons, as mentioned) to be an illusion*. Just as the concepts of appearance and reality are initially (at an uncritical, naïve level) the same, so in every instance they remain equal except where illusion is demonstrated (or at least, doubt is instilled). This principle, indeed, underlies and justifies all inductions.

Note well that the above differentiations between existence, appearance and reality are not immediately obvious, neither in the development of an individual's knowledge nor in the history of human thought. They are not *a priori* givens, or self-evident deductive certainties or an axiomatic absolute truths, but conclusions of rational (conceptual and logical) process. That is, they express a set of hypotheses which *inductively*, over time, have been found to satisfactorily integrate and explain a mass of appearances, i.e. to fit-in in a comprehensive and convincing world-view. Thus, to mention these differentiations *ab initio*, as we do here, may be misleading – they are only at this stage vague notions and assumptions, which are in the long run further defined and found confirmed by the absence of any equally credible hypotheses, any other conceptual constructs which prove as coherent and consistent both internally (as theoretical postulates) and externally (in relation to cumulative appearance, and especially experience). Their being hypotheses does not per se invalidate them, for the claim that all hypothesizing is invalid is itself equally hypothetical and so self-invalidating.

We shall again anticipate, with reference to what we mean by '**consciousness**' or 'awareness' or 'cognition.' This may be defined as *the relation* between Subject and Object, whatever activities or states either may undergo within such relation[1]. The fundamental given is appearances – but we have no reason to believe that all appearances appear to each other, i.e. we seem to have a privilege among existents in being aware of other existents. We suppose thereby that the fact of 'appearance' is different from mere 'existence,' and occurs *only* relative to a conscious Subject.

The '**Subject**' of this relation is identified with the intuited self (me, in my case – you, in yours), but such intuition has at first only the status of an appearance; it is initially a vague and uncertain notion rather than a fully developed and justified concept. The other pole in the putative relation of consciousness, the '**Object**,' refers to the appearances involved (which are here given another name to stress their being taken into consideration specifically within the said relation).

To posit such a relation does not tell us anything much about it, admittedly – we merely have a word for it, referring to something supposedly too primary in knowledge to be definable. But the trilogy Subject-consciousness-Object is posited by us in a bid to understand and explain how and why appearance differs from existence. The meaning and validity of this hypothesis, including the new ideas of a Subject and consciousness, are not immediate, but established with reference to the cumulative thrust of experience and reasoning, including consideration of conflicting hypotheses. It is only after the latter are found less coherent and consistent than the former that we inductively conclude that our hypothesis is convincing and reliable.

Let me emphasize preemptively that to postulate that ***appearance signifies existence within awareness*** is not meant to imply that the existence of appearances is *caused by* awareness, but only to *differentiate* putative non-apparent existents from appearances. The relation of consciousness is postulated as per se neutral, affecting neither the Subject nor the Object. Existents remain essentially unchanged by it when they enter the field of awareness and are labeled more specifically as 'appearances.' To presume the contents of consciousness 'subjective' (in the pejorative sense of the term), implying a dependence (creation or modification) of the Object by the Subject, is a very different hypothesis; one, indeed, hard to uphold, since if we apply it to itself we put it in

1 Whereas 'consciousness' refers to the relation, 'cognition' is conceived rather as an 'act,' and 'awareness' as a state – but for our purposes we shall regard them as equivalent terms. The point is that the essence is relational, irrespective of activities or states that may often attend it.

doubt. Moreover, if such subjectivist hypothesis were claimed true, there would be no need for it, for 'appearance' and 'existence' would be coextensive. So our hypothesis of consciousness is inherently rather 'objectivist.' Evidently, there is lots of reasoning behind such concepts and postulates; they are not arbitrary assertions (as some philosophers contend). Also, such reflections and clarifications are not and need not be consciously made before at all embarking on the enterprise of knowledge; they flower gradually in response to specific doubts and questions.

3. Material, Mental, Intuitive, Abstract

Now, of all appearances, those labeled '**phenomena**' are the most manifest, the most evidently present to our consciousness. They are so called to stress that we should not immediately take for granted their apparent reality, having over time become aware that some are best judged illusory after due consideration. Phenomenal objects seem more directly or immediately knowable than others – apart from the issue of reality or illusion just mentioned – so we assign them a special kind of consciousness or cognition called perception and label them 'percepts.'

Among phenomena, some are more ostentatious and permanent than others and seem relatively far and independent of us – these we refer to as '**material**' or 'physical.' The remainder we label '**mental**' or 'imaginary,' distinguishing them by their relative poverty, transience, intimacy and dependence on us. Most of our common 'world' (cumulative appearance) is composed of material phenomena, and all or most mental phenomena seem to be derivative replicas of them or of parts of them. Among material phenomena, some are considered 'in our own body' or 'physiological,' and the others 'outside our body,' our 'body' being distinguished by its relative proximity (to the observer) and the peculiar events occurring in it (sensations and sentiments). Some bodily phenomena (such as sentiments and 'actions') seem to have mental origins, and so are called 'psychosomatic.' Conversely, many mental phenomena are regarded as having bodily causes.

In addition to mental phenomena, we should distinguish the non-phenomenal appearances we may call '**intuitive**' appearances, which are our impressions of self-knowledge (one's self, cognitions, valuations, volitions). These differ from imaginations, in that they per se have no phenomenal expressions, yet they share with mental phenomena the appearance of intimacy and being in our power to some degree. They are assigned a specific kind of consciousness called intuition (whence their name here) or apperception.

Phenomena (mental or material) and intuited objects have in common a status of *immediate evidence*, which we express by calling them '**empirical**' or 'experiential.' Experiences are 'givens' in a way other appearances (namely abstracts) cannot match. Considered purely in and for themselves, without interpretation or inference, they are unassailable, not requiring any proof. To distinguish them from abstracts, they are called **'concrete'** appearances or concretes.

'**Abstract**' appearances or abstracts may be classed as last in that they seem *derived*, by various means, from the preceding, experiential (concrete) varieties of appearance. These means are collectively labeled 'rational' (implying they proceed from a faculty of reason). The term abstract refers to the primary act of reason, namely abstraction (which depends on identification of sameness or difference, i.e. on comparison and contrast between two or more appearances).

Abstract appearances share with intuitive ones the lack of phenomenal manifestation; we have nothing to directly show for them, they are phenomenally blank. But abstracts differ from intuitive appearances, in that getting to know the former requires a process (comparison and contrast), whereas the latter are directly known (in self-experience). Furthermore, abstract objects are 'universals' and essentially 'external to us,' whereas intuitive objects are 'particulars' and very much 'part of us.'

Consciousness of abstracts is called conception, so they are also called 'concepts.' But the processes leading to concepts (our discourse) are far from simple and seem subject to many rules; the latter are labeled 'logic.' Abstracts require proof, and ultimately some sort of empirical grounding. The only exception to this rule is the case of self-evident propositions, which cannot logically be denied without committing a self-contradiction. But even in the latter cases, the concepts involved are never entirely 'a priori,' but require some preceding experience to have at all arisen.

Let me summarize here: perception is knowledge of material or mental phenomena; intuition is self-knowledge; perception and intuition are experiences, their objects are concrete particulars; conception is knowledge of abstracts, derived with the aid of logic from phenomenal or intuitive data. 'Knowledge,' of course, at first simply means consciousness or cognition – the term is rendered more precise later with reference to cumulative Appearance. 'Thought' and 'idea' are, by the way, catchall terms that may include a mix of conception (concept formation, conceptualization), imagination (visualization, verbalization, forming hypotheses) and logical discourse (inductive and deductive), all of course implying some experience (sensory or intuitive).

> As I have indicated earlier, I am not convinced that qualitative differences alone suffice to distinguish material from mental phenomena. We tend to think of the latter as less clear or vivid than the former, but this is not always the case. Dreams are sometimes extremely vivid and colorful, and the physical world is sometimes misty and unclear. For this reason, I suggest that phenomenology must suppose that introspection is to some extent involved in making this fundamental distinction. We are presumably somehow aware of the *direction of input* of the concrete data. Material data is 'felt' as coming from or via the body, whereas mental data is 'felt' as coming from a closer source (called the mind). Granting that such 'feelings' of direction of source are not themselves phenomenal marks (otherwise we would be begging the question), we must interpret them more precisely as *intuitions*. To be consistent we must say that we do not intuit where the data comes from, but rather intuit in what direction *we turn* our attention to gain access to the data.

It should be noted that we have above effectively distinguished three **substances** or stuffs of existence, matter, mind and spirit. We have based their differentiation partly on the fact that some experiences (those intuited) do not have phenomenal characteristics; and partly (as regards the distinction between material and mental phenomena) on the differences in phenomenal properties and locations combined with assumed intuited differences. All three of these substances may give rise to concepts. We may also presume souls, i.e. spiritual entities, other than our own through their apparent phenomenal effects and by conceptual means.

Just as the phenomenal modalities and qualities and their behaviors are considered as mere varieties of matter and mind, so the cognitions, volitions and affections of the soul need not be assigned yet another substance, but may be considered as events or properties of that same substance. Abstracts relating to material, imaginary or spiritual givens do not, likewise, require a further substance, but may be considered as mere expressions of these three substances. There is nothing epistemologically unreasonable in assuming substantial differences between the said three classes of object. It remains possible that the three substances are ultimately different versions or degrees of one and the same stuff.

The concept of substance is introduced relative to those of static attributes and dynamic movements, implying a presumed substratum for them. It allows us to presume continuity of something, an individual **entity**, in the midst of motion or change. The various attributes and movements are thus conceived not as mere happenstances but as all 'belonging' *to* and 'caused' *by* an abiding, unifying entity2[2]. We also assume that different instances of that kind of entity remain essentially the same (i.e. of same substance) although some of their attributes and movements may differ. Note well that both 'substance' and 'entity' are abstracts. Although material and mental phenomena have phenomenal character, while soul has not, the latter may nonetheless equally legitimately be conceptually posited as being concrete.

These beliefs, in substances and entities, are not immediate certainties but constitute conceptual *hypotheses*. This fact alone does not disqualify them, contrary to what some philosophers suggest. If a hypothesis gives rise to a world-view that is always, all things considered, consistent and confirmed, and no alternatives serve the same purpose as well or better, then it is inductively worthy of adoption. This seems to be the case with regard to the concepts of substance and entity. Without them, we would find ourselves unable to 'make sense' of (integrate, explain) all our experiences and intuitions; no one has to my knowledge managed to construct in detail equally credible and useful counter-hypotheses.

4. Number, Space and Time

As will be explained, concepts are *measurements* that experiences have in common. Measurement means use of **number**, i.e. selection of a unit (distinct entity or feature), identifying and counting pluralities of such units (frequencies), and comparing such pluralities (proportion). Number is, in particular, implied in our subdivisions of time and space, and in considerations of modality and causation; but the scope of measurement is of course much larger. The detailed study of these issues gives rise to the sciences of mathematics, including arithmetic, geometry, algebra, statistics. I will not go into them here, save for a few remarks that seem pertinent.

Phenomenology has to note that numbers imply intuitive acts. To define a unit of something, we must mentally delimit some segment of appearance. This selection is an intention, a subjective act. Furthermore, when we count a plurality of things, we need to decide what common feature we will refer to so as to group them. That is to say, to count things we need to classify them (whether simply as 'any objects of thought,' or more specifically as 'the white horses in my field' or whatever). Here again, an intention is involved. The same is true when we move on up to the abstract realms of algebra. Thus, even in the background of pure mathematics, we must acknowledge introspection.

With regard to **space** and allied concepts. In the visual field (which is the first domain we relate space to), space refers to the length of a line (in comparison to some other line) between any points the observer focuses on, and eventually to the direction of that line (again relative to some other line). The visual field ordinarily contains many different colors, shades and outlines: these shapes commonly guide our choice of points to measure distances and angles between. Thus, gradually, we evolve geometrical concepts, including the concepts of dimension (more on all that in a later chapter). Concepts like: contiguous, separate, overlapping, inside, outside, near, far, etc. all of course derive from situations we encounter in the visual field. Many of these concepts are then carried over into other fields, and even into general logic.

It is important to distinguish the concept of '*empty* space' from the more general concept of 'space.' Many philosophers seem to get bogged down due to failure to make this distinction. We effectively see space (at least surfaces) whenever we see anything; space is a concept with concrete referents, viz. any area of the visual field. In contrast, empty space is a *hypothetical* concept, because we never see instances of it. If we look at the sky, we see a curtain of light blue or white or black – we never see nothing at all there. If we look at the space between two objects, we may only call it empty by deliberately ignoring all the things (colors, shades) in foreground or background between them. It is only by inventing a 'third dimension' (an abstraction) that we 'create' the emptiness between the two objects. Thus, space as a receptacle of objects, something objects move in, something apart from objects – these are constructs, that we find useful, but whose status is that of hypotheses.

Another comment worth making concerns the different phenomenal modalities of space. We have the impression that we know 'analogies' of space through the various sensory organs, but it is not strictly speaking the case. Space is essentially a visual phenomenon. As mentioned previously, we mentally project this visual space and its properties into the other sensory modes[3]. This allows us to effect an inner *correlation between sensory events or sense-modalities*. Thus, different tactile or auditory events may be regarded as points in a continuous trajectory, by mental projection of (visual) lines linking them. Or again, the direction of a sound or odor may be hypothesized by mentally placing it within a (visual) mental space. Or again, the touch sensations inside the mouth can be used to form a mental visual image of objects in it (this is, by the way, possibly why babies often get information on objects by putting them in their mouth).

Thus, we should not multiply 'spaces' unnecessarily. There is, however, one important duplication of space, implied in what we have just said. In addition to the visual space seen through the physical eyes, there is an analogous visual space seen through our 'mind's eye' – that is to say, in the mental domain. That concept is unavoidable, since just as with a material visual field we can all construct space concepts, so with a mental visual field we can likewise do. These two spaces can be known independently of each other. They are similar, but not

3 I think we have to assume that non-visual sensations generate a unit visual mental phenomenon, which is then placed by us in a visualized "map" of our body or surrounding space. Without such an initial generation of some minimal visual message, it is hard to conceive how the later interpretative overall picture of things could be produced.

one and the same. They may overlap somehow, as is evident from the experience of hallucination and from the use of mental space in tactile, auditory and other such situations; but they do not apparently interact, at least not directly.

The spiritual domain, i.e. the soul and its functions, does not (as far as I can tell) have noticeable spatial characteristics. But the soul is sometimes 'represented' by visual images (e.g. as a ghost coextensive a body). Such 'representation' is nothing more than symbolic or hypothetical, not based on concrete phenomena. It can however be useful conceptually, as for instance to suppose that one part of the self monitors or controls another part of the self.

Another important organizing concept to consider is that of **time**. This arises as an explanation of apparent movement (motion or change) *within* any present Appearance (minimal version, assumed independent of memory) and of apparent change or plurality of Appearances (enlarged version, relying on the hypothesis of memory). Note this well. A concept of time is indeed possible within a single present Appearance, be its constituents material (external time) or mental or intuitive (internal time). This concept of time is independent of that of memory (and could be labeled 'objective time' for that reason), but is not our whole concept of time. The latter is based *also* on comparisons between successive present Appearances, and therefore only possible by hypothesizing the concept of memory (because of the necessity of such introspection, this may be called 'subjective time').

The concept of **memory** must therefore also be considered as one of the basic 'organizing principles' of our knowledge. It is a hypothesis, through which we try and *enlarge* our concept of time, to include not only events experienced in the present but also those allegedly experienced in 'previous' presents. The concept of **anticipation** enlarges time still further, in another 'direction,' time being conceived as a line, a fourth dimension of existence, by analogy to space, though with a distinctive irreversibility. But memory and anticipation are not conceived as fully equivalent functions, differing only in the temporal placement of their objects. Memory is conceived as containing (if anything) residues of facts (experiences), whereas anticipation is normally conceived as at best educated guesswork (projection).

We cannot prove memory, except by inductive appeal to our memories, taking their apparent suggestions at their face value, except in cases where they turn out erroneous. Digging deeper, phenomenology now asks the following question: *precisely on what empirical bases do we distinguish non-present from present appearances, and subdivide the non-present appearances into past and future ones?* I will try and propose an answer to this question, without claiming it to be complete and final.

The '**present'** portion of time is firstly the overall duration of the present Appearance, the moment. Within the present Appearance, we distinguish constituent phenomena and intuitions that seem hazier, less forceful, than others, and yet resemble those others and give the impression of continuity with them. These presentations are presumed and classed as not in themselves present, but as mere 'representations' of presentations which occur in an extrapolation of the present (short) time-line, in one direction or the other. Some of these representations seem to refer to previous present Appearances; these are classed as memories and located on one side of the time-line called the '**past**.' The remaining such representations seem not to refer to previous present Appearances, but to be inventions, mental projections (imaginations) of things to come; these are classed as anticipations and placed on the other side of the time-line called the '**future**.'

Here again (as in the case of the distinction between material and mental phenomena), I doubt that we can distinguish between present impressions of present events (the present) and present impressions of past events (the now remembered past) or of future events (the now projected future), *only* with reference to marks (like degree of vividness). I think we have to assume that there is *also* an intuition by the Subject as to where his experiential data is coming from – from his senses (the present), or from his memory (the past), or again from his creative imagination (the future). The recourse to an intuitive faculty here is similar to that for distinguishing between material and mental, because after all memory of material events means their conversion into mental events. Memory of mental events is less of an issue, since recall of past imaginations is simply re-imagination of same; and in this case intuitive knowledge of the difference is more easily assumed.

> These kinds of considerations and reflections serve, in my view, to add weight to the hypothesis that we have intuitive empirical knowledge in addition to inner and outer perceptual empirical knowledge.

Conversely, the hypothesis of intuition reinforces the hypothesis of memory; they mutually buttress each other. Additionally note that while intuition is initially proposed as knowledge of self, own cognitions, volitions and valuations, we have here somewhat expanded or further elucidated the powers of intuition, by assuming its ability to assess the direction of incoming concrete data (from senses, memory or creativity, or from mind or matter).

As the above discussion shows, philosophers who wish to discard the idea of subjective intuition, or direct self-knowledge of some of our inner workings, are hard-put to explain some of the other basic concepts that they effectively accept, such as distinction between matter and mind, or between past (memory) and present (sensation) and future (anticipation). However, none of this means that whatever someone carelessly declares to be an intuition is indeed an intuition. Our introspections remain fallible. Logically, they are admitted as hypotheses to be gradually confirmed or rejected in each instance with reference to the totality of experience and logic. This avoids all danger of arbitrariness, or circularity in justification, or eventual contradiction.

With regard to the *abstract* constituents of an Appearance, they are thought permanent rather than transient like phenomena or intuited events, although (a) they are usually conceived by comparisons between past and/or present appearances, and (b) of course the event of their conception is located in the past or present and it may go on over time, and (c) once generated they are stored in memory and (d) by their nature they anticipate future appearances. All this relates the conceptual to time, but does not mean that its contents are temporal like percepts or intuitions. Concepts have no existence other than as measures of experiences; when the experiences cease to recur, the concepts in a sense continue to exist in the minds of men, in that men may remember or infer their past existence. If later the experiences recur, we may say *ex post facto* that the concepts remained in potential existence during their actual absence.

I will stop here, save for a couple more comments.

The first is that although I have herein placed consideration of space and time after the distinctions between phenomenal (material or mental), intuitive (subjective) and abstract appearances, it is evident that many of the things said about space and time do not depend on these distinctions. Thus, for instance, we can measure a visual field without specifying its substance (material or mental). On the other hand, some issues relating to space or time are not independent of these distinctions. For instance, when discussing memory or the concept of the past, we had to refer to the concepts of matter, mind and intuition. With regard to the concepts of modality and causality, the concepts of space and time play important roles in their development, rather than the reverse. Thus, when issues of the ‘order of things’ in knowledge arise, we must be attentive to the specific issues we are dealing with, and not refer to concepts in bulk.

The other point I want to make is that although I do not here mention the space-time concept of Einstein, which ties the two concepts together in novel and much firmer fashion, I have no doubt that Relativity is of radical importance to all the issues treated here. I would particularly like to eventually think about the impact of his insights on the theory of universals, since presumably waves in a relativistic milieu do not have the same properties as those in an absolute space. But for now at least I am not qualified to comment on this.

5. Modality and Causality

Modality and **causality** are also major organizing principles in our knowledge.

I have treated the concepts of modality in great detail in my work *Future Logic*, and I am treating the concepts of causality in great detail in my work *Causal Logic*. So I will not here go into them in any detail. Suffices to say that they are essentially *statistical* concepts, variously related to each other, through which we record, or try to forecast, the (proportional or absolute) frequencies of occurrence of appearances, alone or in conjunctions with other appearances. These concepts therefore rely on numerical concepts; and they help us to order information within a present Appearance, and more broadly in cumulative Appearance.

> The underlying concepts of ***conjunction*** (indicated in propositions by the word 'and') and ***non-conjunction*** (denial of conjunction, 'not-and') are of course crucial. Conjunction can be directly apprehended (we can experience two things as both present in a given cognitive field), whereas negation of conjunction is a more rational object (we look for a projected presence and fail to find it). Conjunction is however not in itself a concrete phenomenon or intuitive experience, but an abstract relation between phenomena, intuitions or abstracts.
>
> Thus, both conjunction and its negation are conceptual objects, though to different degrees; the former is more directly known than the latter. Note well: this does not make them artifices; there is nothing arbitrary in their apprehension or judgment. These concepts are needed to formulate hypothetical and other conditional propositions, and the causal propositions built up from them.

Modality and causality are very radical principles of knowledge, because they are involved in its organization at a notional level long before they become clearly formulated concepts, and because they can be utilized before we make (i.e. even without making) distinctions like those between concrete and abstract, or material and mental, for examples. At an explicit level, they imply number; but on a notional level, they may be grasped and used without such references.

I have identified many 'modes' or types of modality and causality. The main mode, an ontological consideration applicable to individual existents, is the 'natural' mode (and its subsidiary 'temporal' and 'spatial' modes). Another important mode is the 'extensional,' which treats classes as individuals. The 'logical' mode is an epistemological version, which refers to contexts of knowledge, instead of circumstances of existence. Some modes relate to volition, as for instance the ethical or teleological mode, which refers means to ends.

Within each mode, there are various categories of modality and causality. Thus, the categories of modality are: presence or absence; necessity, contingency (possibility and possibility-not) or impossibility; probability or improbability. These are variously defined: possibility, as presence under certain conditions; necessity, as presence under all conditions; and so on. Their interrelations follow: necessity implies presence, which in turn implies possibility; and so forth. In particular, the concepts of incontingency follow inevitably, by negation, from those of possibility to be and possibility not to be, so that one cannot logically both uphold the latter and deny the former[4]. The categories of modality may be given more specific names in each mode. For instances: in natural modality, presence is called actuality and possibility is called potentiality; whereas, in ethical modality, possibility is called permissibility.

> Attention must also be given to derivatives of modality, concepts like ***seemingly***, ***allegedly***, etc., that imply modality in some sense (e.g. possibility, probability), but which additionally define the experimental or experiential or report-based or hearsay epistemological basis of the modal nuance.

A phenomenological approach to modality would ask such questions as: 'where do potentialities that are not actual at a given time actually reside?' Our answer to that one will be (as it was in *Future Logic*) that the common idea of potentiality as referring to some 'substantial quality or entity' actually resident in the 'nature' of the thing having it, as a presence that changes form when it actualizes, seems redundant, a breach of 'Ockham's Razor' of conceptual economy; it suffices to assume that the potential resides 'in actual surrounding circumstances only.'[5] The potential may be viewed as a lesser 'degree of being' than the actual, which in turn is a lesser one than the necessary, with reference to the frequency of occurrence over the whole 'existence' of that which has it. But this difference between transience and permanence, or variability and constancy, does not have to be reified. Concepts may refer to abstractions, as well as experiences.

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4 This is stressed to preempt foolish philosophies, like that of Hume, which while admitting (if only by implication in their discourse) the existence and knowability of 'possibilities' pretend to succeed in invalidating the concept of 'necessity.' Logically, no concept that refers to *a part* of existence (like 'possibility') may be used without thereby granting its negation, too, so as to account for and cover *the remaining portion* of existence.

5 Buddhists would say that potentiality is 'empty' – i.e. it makes no trace in that which has it, but exists solely in the conditions that may eventually, given an appropriate cause, actualize it.

A phenomenological approach to causality would begin with consideration of events or things of any sort as 'happenstance,' before deciding *whether or how* they are 'caused'[6]. I myself use the term 'causality' in its widest possible sense, as applicable to any answer to this question. I thus accept, as at least conceivable, spontaneity, causation, volition and influence. Whether these philosophical concepts relating to 'causality' all have expression in our world is an issue open to debate; but we may and must first try to elucidate and interrelate them. The issue is to be resolved without prejudice, by due consideration of experience and how to convincingly organize it. Thus, if physicists (such as Niels Bohr) considered that some subatomic events could not credibly be assumed to have causes, we may concede the hypothesis of 'spontaneity' in the physical domain at the levels concerned as an explanation.

Causality, then, is not to be equated at the outset (as it has been by some in the past) to causation, meaning physical and (by extension) psychological determinism. The negation of causation may also be considered as a 'causal' explanation. Similarly, volition cannot be simply waved-off, but must be granted due consideration. And indeed, we need to persevere in this open-minded attitude, for whereas causation and with it spontaneity are relatively easy to define with reference to *frequencies of conjunction* of phenomenal events or abstracts about them, defining volition or 'free will' is very difficult. No one to my knowledge has succeeded so far, let alone proving that volition exists, i.e. that people and animals have this power. The concept of influence is subsidiary, since we can define it as 'making it easier or more difficult' to will something.

Phenomenology may take as experiential data of sorts the anthropological fact that most or all people in practice if not in theory consider that they have powers of choice, of decision, of initiation of mental thoughts and physical movements. Such beliefs do not prove volition, but constitute corroborative evidence in an inductive hypothesis. Another public sector fact to consider is that the concept of volition precedes that of causation in mankind's history (and still does so today, I believe, in the personal development of individuals). Long before we reached an understanding of things as having 'natural causes,' we were explaining the movements of stars or stones or our own fate or moods with reference to 'spirits' or 'gods' or later (with the advent of monotheism) to God.

Our concept of 'force' is obtained by abstraction from the introspected physical sensations of pushing, pulling and squeezing. This notion is then used to help us understand *by analogy* the determinism of events we (today, at least) consider as natural and not as involving any volition. Thus, Newton conceived gravity as a "field of force," and this terminology has remained with us for other fields. Even in our modern statistical concept of causation, we explain the constant conjunction observed as being symptomatic of a "causal connection," i.e. an underlying (natural) 'force.' Similarly, we would imagine spontaneous generation as a sort of 'forcible' gushing forth!

The 18th Century Scottish philosopher David Hume acknowledged this subtext in his critical discussion of alleged causal 'connection.' For him, such a 'tie' between events was dubious, first because we never perceive instances of connections, but only instances of mere conjunction.

> *"All events seem entirely loose and separate. One event follows another; but we never can observe any tie between them. They seem* conjoined *but never* connected*." (P. 360.)*[7]

This argument of Hume's is, note incidentally, based on an observation relative to (and which assumes) human will, a form of causality more difficult to conceive than causation! In the human (volitional) domain, we do distinguish between (a) conjunctions of events that occurred accidentally relative to human will, i.e. coincidences, and (b) conjunctions of events that were deliberately intended. It is significant that Hume's 'mere conjunction' is intelligible to us due to our experience of (a), while it is (b) that makes his discussion of contrasting 'connection' meaningful to us. Hume does not define what 'connection' would be in the natural (i.e. non-volitional) domain, before rejecting it. At best, then, his argument amounts to saying that the notion is too *vague* to be scientific.

Moreover, Hume explains away our belief in connection as due to a mental habit produced in us by repetition.

> *"But there is nothing in a number of instances, different from every single instance, which is supposed to be exactly similar; except only, that after a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist. This*

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6 This 'first things first' attitude is equivalent to that of taking appearances at face value before deciding whether they are reality or illusion.

7 In An Enquiry Concerning Human Understanding, Part II.

> *connection, therefore, which we feel in the mind, this customary transition of the imagination from one object to its usual attendant is the sentiment or impression from which we form the idea of power or necessary connection." (P. 361.)*

We could retort, for a start, that his thesis is internally inconsistent, if it is understood as a denial of methodological validity to generalization. For it is clear that Hume's own statement about human habits is a generalization from his own observations. He generalizes from some moments of his experience to all moments, and from his own experience to everyone else's. Moreover, his statement is presented as an *explanatory* thesis, regarding what 'causes' us to (erroneously, according to him) infer a fact of causation from such mental association. He thus implicitly lays claim to some knowledge of some sort of causality, that of the force of habit. Is his thesis, then, that causation is more knowable in the psychological domain than in the physical? I doubt it; rather he did not notice the inconsistency.

> *"The appearance of a cause always conveys the mind, by a customary transition, to the idea of the effect. We may, therefore, suitably to this experience, form another definition of cause, and call it,* an object followed by another, and whose appearance always conveys the thought to that other.*" (P. 362.)*

For Hume, then, what we call causation is only an association of ideas. That is, we think events to be causally connected because they happen to be constantly conjoined in our memory. Whence, he effectively 'infers' that causation is a figment of the imagination. But his thesis is a result of his imprecise thinking. What he seems to refer to are situations like the following: e.g. a man first met his wife-to-be when a certain musical tune was playing; since then, whenever he hears (or remembers) that tune, he is *reminded* of his wife[8]. But we would not regard such a situation as indicative of causation, since in fact he does *not* physically see his wife again every time he hears the tune again! For this reason, we would call this conjunction through mental association of wife and musical tune coincidental (although the mental sequence of *memory* of tune and *memory* of wife might well be called a causal relation of sorts). On the other hand, if every time someone played the tune his wife was physically conjured, we would suspect a causal connection.[9]

If we put all this in clear, formal language, all doubt is easily dissolved. Four forms may be distinguished:

a. X causes Y
b. X causes *the thought of* Y
c. *The thought of* X causes Y
d. *The thought of* X causes *the thought of* Y.

These four forms refer to very different relations, but all four have in common the relation "causes". The terms differ, but the copula remains the same. To prefer (as Hume does) one of these forms to the others, as the appropriate description of the events at hand, does not succeed in discrediting the common factor of causation, but on the contrary supports it. Hume's reasoning is self-defeating!

In my view, apparent causal relations may be real or illusory. Unlike Hume, I do not see the *fallibility* of our judgments about causal connection as proof of our *inability* to establish causal connection. In this context as with all other conceptual judgments, processes of generalization and particularization are involved. There are *two generalizations* involved, we might say. The first is *from observed particular conjunction to general conjunction* (including unobserved instances). The second is a generalization *from such constant conjunction of events to a presumed 'connection' between them* (i.e. something deeper and more forceful than mere conjunction). If we admit the (occasional, so long as empirically confirmed) validity of the first generalization, we may not deny it of

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8 The converse is unlikely, i.e. that whenever he sees or remembers his wife, he is reminded of the tune. Unless the poor man is obsessed!

9 Here is a more common example of association. I glimpse a person, who faintly reminds me of Miss X, say. But it turns out on closer inspection that it was not Miss X which I just saw. Notwithstanding, given this occasion I start incidentally reflecting on Miss X, thinking of our last contact together, what we said, etc. These reminiscences may in turn give rise to new thoughts logically unrelated to Miss X, such as the present philosophical analysis of 'association'. And so forth, till I manage to change the subject.

the second process, which is *in principle* no different. We could only at best deny it *in specific cases*, as a particularization; though I do not see how we might justify such a discrimination or partial particularization.

In other words, how does Hume himself know (granting that 'connection' is meaningful, though difficult to define in words) that 'constant conjunction' does not imply some deeper 'connection'? He can only consistently claim that it *sometimes* might not. But *in that case, his argument loses all its force*, which depends on generality. Nothing precludes us from formulating hypotheses about constant conjunction and about causal connection, provided we validate our theories in each case in accord with the rules of adduction, testing our propositions with reference to consistency and experience, and by comparison to alternative theses.

In addition to the above-mentioned physical sensations, our introspection suggests that 'we' have *some* degree of control over *some* of the physical movements of our body (and through it of other bodies) and over *some* of our mental imaginations. It is at this level, that of intuition (and not that of sensation), that the concept of volition arises. This inner cognition of self as actor in the mental and physical world may well ultimately turn out to be an illusion, but it must be granted credence at least to begin with as raw data. Any sincere claim like this has to be respectfully acknowledged, as an appearance to be taken into consideration in the overall arrangement of data. There is no methodological justification in outright denial (as indulged in by some dogmatic modern Mechanists).

Many experiences and abstractions, as well as intuitions, suggest volition. For instance, certain sensations depend on movement, be it movement of an object in the mouth, of one's skin against an object to feel its texture or mobility, torsion of one's body parts in different directions like the eyes for seeing or head for hearing, of a part of our body relative to the others such as an arm, walking through space to experience depth, or even speaking out to produce sound. Also, attention towards present phenomena, looking at the past or trying to forecast the future, all seem like acts of volition. Similarly, imagination, concept formation and logical insight are experienced as often calling for effort, or at least as acts of choice. Consequently, the concepts of time and space may be said to be dependent on volition. Similarly, volition seems involved in verbal thinking.

We undeniably have some sort of personal awareness that we have a certain power of action in the phenomenal environment. It is not an absolute and unlimited power, but it is 'felt' as there all the same. No sensible qualities can be said to *be* volitional acts; but many may be considered as *signs of* volition. Rather, we 'know' internally and directly whether or not our volition was involved, at least most of the time; it is an object of intuition. Indeed, this function is, together with cognition and affection, regarded by us as essential aspects of our identity. Volition is certainly an integral part of our logical discourse in sorting out other experiences, as for instance when we correlate different sense modalities. I may for example formulate a proposition about perspective: 'if I turn around this object, it will change shape thusly and thusly,' projecting a volitional series (turning around object) and predicting a certain phenomenal sequence (visual and other changes).

3. Experiences and Abstractions

In the present chapter[1], we shall try and classify appearances in various ways (please refer to **Figures 1**, **2** and **3** for a useful summary and illustration). The objects of knowledge, contents of consciousness, or *appearances* to cognition, include: firstly, the concrete phenomena we perceive either through the senses or as mental projections; secondly, the concrete but non-phenomenal objects of intuition (self-knowledge); and thirdly, the abstract appearances we conceive through inductive and deductive logic in relation to the aforesaid experiences (i.e. phenomena and intuitions).

1. The Objects of Perception

Perceptual objects, i.e. the 'things' we perceive, also called **percepts** or **phenomenal appearances**, are counted as **experiential** or **empirical data**, i.e. concrete (non-abstract) evident givens, on the basis of which knowledge is gradually constructed. Percepts are of two kinds (or sources), the material (or sensory) and the mental (or imaginary), which may be *phenomenologically* distinguished as follows.

(a) **Material phenomena** (or 'sensa') are at least *seemingly* perceived through the senses. They include the following appearances (and some of their components).

- **Visual** phenomena: the different intensities of light and colors (among which we discern various shapes, sizes, distances, directions) that seem to be perceived through the eyes (organs of sight).
- **Auditory** phenomena: sounds (including loudness, pitch, tonality, direction and other features), and sense of balance[2] (from which, bodily inclination) that seem to be perceived through the ears, organs of hearing.
- The **olfactory** and **gustatory** experiences: odors (fragrant, pungent, fetid, etc.) sensed in nose (the smell organ), and flavors (salty, sweet, sour, bitter, etc.) sensed in mouth and tongue (the taste organs).[3]
- **Tactile** phenomena: the feelings we experience as 'within the body or on it (at the skin)' – contact, resistance to pressure/push and tension/pull (hard/soft, rigid/elastic, heavy/light), texture (rough/smooth), temperature (hot/cold skin or body), electricity (shocks), bodily posture (stand, sit, etc.), movement (of parts or all of body), and visceral pleasure and pain (or their lack, indifference), whether physically caused (sensational) or caused by mental phenomena (sentimental), which we classify as aspects of the sense of touch[4].

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1 Some of these reflections are already to be found in my 1990 work, *Future Logic*. In 1998, after attending a lecture by Prof. Roberta de Monticelli at Geneva University on the phenomenology doctrine of Edmund Husserl, I wrote an essay summarizing and updating my own views. In 2002 (at about the same time as I was writing *Buddhist Illogic*, which was intended as a companion piece), I began rewriting it all, more fully and systematically, resulting in the present book.

2 The role of hearing in equilibrium is not immediately evident, and is I think historically a relatively late discovery. It is not the hearing organ *per se*, I am told, but another mechanism in the ear, with liquid levels (whatever). The issue here is this: is there a *cognitive* act relative to these liquids, so that we can speak of sensation of a phenomenon; or is the 'information' (that's the wrong word, suggesting consciousness; I here use it as in computer science) simply directly transmitted to the brain as a *physical* process.

3 Some aspects of flavor (in common parlance, about food or drink) are more precisely odors.

4 Note that what we call the sense of touch is a grab-bag of very different functions. The term is effectively used in Western philosophy as an "all others" class. Its colloquial usage is narrower; here, "touching" refers to effecting a physical contact between part of one's body and some other part or body, and "feeling" refers to the resulting sensory experience. I see no utility in making this an issue here, one way or the other. It is up to biologists to decide on more precise classification. I would however stress the distinctiveness of inner bodily sensations (in the sex organs, in the digestive system, etc.) and sentiments (various emotional expressions) from mere touch sensations; the former feel more chemical than mechanical.

The field of material phenomena is subdivided into two spaces: one, experienced as close to oneself (the center of experience or observer) and relatively constant (for us, at least in the short term), is called '*one's body*'; and the other, lying further away and more variable, is called '*the environment*'. Both the physical body and the matter beyond it have visual, auditory, tactile, olfactory and gustatory manifestations.

Additionally, certain parts of the body, called the five '*senses*' or '*sense organs*', are regarded as specifically involved somehow in the perception of these manifestations. These organs, located roughly in the eyes, ears, nose, tongue, skin and inside the body, can be observed more precisely using scientific instruments (such as a microscope). They are found to be respectively comprised of mechanoreceptors (for touch, position, hearing), chemoreceptors (for taste, smell), photoreceptors (for vision), temperature receptors and receptors for the sensations we recognize as pleasure and pain[5].

> That the sense organs are a *sine qua non* to material perception is evident from the fact that when such an organ is blocked temporarily, damaged, amputated or missing from birth, the corresponding perception is lacking or distorted. But the sense organs are *not alone sufficient* conditions of such perception: our attention to what they reveal is necessary too. Therefore, sensory perception cannot be *equated* to possession of sense organs. It is not the sense organs that perceive. One cannot rightly say that it is the eyes that see or the ears that hear.

Material objects are therefore classed as 'sensory', in contrast to 'mental' phenomena (considered below). The perceived body and sense organs are, of course, *themselves* mere appearances, although are later given a leading role in the mental-construct constituting the naive world-view. The above-listed five kinds of material phenomena are called the ***sense-modalities***[6], and their subcategories are called ***sense-qualities***.[7]

> What is the common property of the various sense-modalities, and the various sense-qualities, which allows us to group them together under these common names? For example, something in front of me both has shape and color and makes a noise, why do I class the shape and color as sights and the noise as a sound? In truth, shape and color are as different in appearance from each other as sight and sound! Their common character has to be supposed merely relational. That is, we may classify them together not because of their intrinsic 'natures', but because they seem related to us observers by sensory experience, through certain bodily organs.

Note well however that the exact role of the senses in perception remains a mystery. For we have to affirm that we perceive what impinges at entrance of the senses, and not (as naïvely supposed by many) end products of transmission by the senses. Otherwise, we are faced with *a logical problem*: we are not perceiving the objects we claim to perceive, but alleged images thereof. In the latter case, we have no way to compare such representations to their alleged origins, and even no right to suppose the 'original' objects existent. In which case, in turn, the sense organs, as themselves objects of perception, are put in doubt; which brings us full circle to a doubt of the initial premise that we perceive images of objects. But granting, therefore, that we perceive the objects themselves, the question arises: what is the use of the senses, then?[8]

(b) **Mental phenomena** are appearances resembling material phenomena, but which do not seem to be perceived through the sense organs. Thus, we should more precisely and broadly refer to ***phenomenal modalities*** (visual, auditory, etc.) and ***phenomenal qualities*** (shapes, light-intensities, colors, etc.), and regard the so-called sense modalities and qualities as referring specifically to those apparently manifested via the senses (the material ones).

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5 According to Curtis and Barnes. They mention pain but not pleasure. Also note, they add that electro-receptors and magneto-receptors are found in some animals, though not in humans.

6 Needless to say, the word 'modality' as used here, to signify varieties of sensory and mental phenomena, is not to be confused with the other sense, of necessary, possible or actual.

7 They are so-called, with reference to the ordinary, naïve-realist assumptions. But my using the word *sense* here is mere convenience, and not be taken to imply such assumptions. 'Sense-modalities' are the modalities of existence (light, sound, etc.) *thought to be* perceived by the senses; 'sense-qualities' are the subcategories of these modalities (e.g. for sight – shapes, light-intensities, color, etc.).

8 See *Future Logic*, chapter 62, for more discussion of this topic.

Although individual mental phenomena seemingly exist independently of temporally simultaneous material ones, this does not exclude the possibility (which I believe[9]) that they are only edited representations of *previously* encountered material phenomena (memories taken as a whole selectively, or taken as bits and pieces and reshuffled). For this reason, it seems proper to define mental phenomena negatively (as above done), as not arising directly through the senses, implying that they probably arise indirectly through creative *projection* of memories of material phenomena.

Mental phenomena are imaginations, projections that may be *involuntary or voluntary to various degrees*, including memories of recent or long-past events and **fantasies** of past, present and/or future events (the latter being anticipations). These may be brought forth for cognitive purposes, or for idle entertainment or other psychological motives. Among mental phenomena, then, we may to begin with distinguish the retrospective from the prospective.

Retrospective phenomena, or **memories**, appear as the past incarnations of the 'present moment,' which we assume to have unity and continuity of sorts with the present 'present moment' and to have been brought into the present through *a faculty of memory*. The consciousness of past claimed to be possible, directly or indirectly through this faculty, is called *remembering*.

> An automatic confidence in our ordinary interpretation of these phenomena would be naïve, but a renewed confidence after due reflection may legitimately occur. What matters to us here is that these phenomena take part *in the present*, and that they *seem* to refer us back into some 'past' existence. This dual presence and absence is a distinguishing feature of the class of retrospective phenomena. The explanations proposed for this mysterious quality of such phenomena (e.g. that we have a faculty of memory that somehow stores information obtained at other points of something called time[10]) require eventual evaluation.

Prospective phenomena, or **anticipations**, project specific scenarios regarding the future. They thus suggest that what we face in the present moment will have some sort of prolongation in the following moments. But we do not in this case posit for ourselves a faculty like memory; we only claim here at best an expectation that things will continue to be or become, and that other 'present moments' will replace the current one (till we 'die,' at least).

> Just as our here and now is tainted, at least peripherally, with an awareness of a before, a past, so it is with a look forward, to a future, which is not quite part of the present and yet seems *potential* in it. Whether justified or not, what concerns us here is that these prospective phenomena take place in the present and yet refer to another extrapolation of what we call time, in a direction opposite to the objects of memory.

Both remembering and anticipation are essentially *inductive* forms of consciousness, note well, in that the Subject projects some interpretation on the basis of certain minimal data. The 'data' are the present phenomena (of apparent past existence or potential future existence, as the case may be), while the 'interpretations' include the acceptance of things pointed-to by these present phenomena as having some existence beyond the present (in a hypothetical past or future part of something called time). This is in contrast to sensory phenomena, which taken in themselves are devoid of theory (though starting points of theory).

> My inclusion of prospective phenomena in this list of components is a debt to Husserl. However, he does not see the inductive nature of anticipation, nor for that matter of remembering. Furthermore, I must add that awareness of these components is no 20th Century novelty. It is found in the mystic traditions (e.g. Meister Eckhart, in Christian mysticism, or to give an Eastern example, in Zen Buddhism), wherever we are encouraged to "live in the eternal present" or to "be here now." What the latter make clear is that remembering and anticipation are not mere adjuncts to awareness of the present, requiring an effort; they

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9 But the question can be resolved empirically. Does a born-blind man have visual imaginations or a born-deaf man have auditory imaginations? If not, then the mental sense-modalities are ultimately side-products of the material ones. (In *New Scientist*, No. 2416, of 11.10.2003, p. 85, Mary Cox of the Royal National Institute of the Blind, London, UK, suggests that the born-blind cannot visualize or dream. She does not say what specific research her statement is based on.)

10 Note that the occasional failure of memory is one proposition *within* this interpretative framework, to explain certain details.

> are for some reason for most humans *compulsive* and very difficult to avoid. If one thinks about it, this is very surprising, and requires an explanation.[11]

Retrospective and prospective phenomena are conceived as mental projections made to some extent by their observer, and so have the initial status of **imaginations**. Indeed, both are essentially hypothetical, in that they are about things no longer or not yet present to sensory perception, and therefore (this is said without pejorative intent) uncertain as far as it is concerned. I expect, however, that the initial elements in memory of visual and auditory imagination are produced (in the recent or distant past) by sense-perceptions (sight and hearing, at least). This question might be resolved empirically by trying to ask people who are *born blind* or *born deaf* whether they, respectively, see or hear anything 'in their heads;' If, as I expect, they cannot, then the mental phenomenal modalities are ultimately side-products of the physical ones. If, as may be the case, they can imagine sights or sounds, then mental phenomena have independent genesis.

> Imagination (the projection of 'images') could also be called 'perceptualization.' More specifically, in the case of visual phenomena, we say visualization; in the case of auditory ones, we could say 'auditorization;' similarly for the other cases, though there are doubts concerning them, as presently explained.

Memories and anticipations are classed as imaginations, note, even though their contents or *intentions* are not necessarily mental, but may relate to outside material events. Unless we suppose a *direct* awareness of remembered or forecast events across past or future time, we must regard them as in-themselves mental apparitions, even if their objects did or will indeed exist as projected in past or future, respectively. When their contents happen to be true, such mental acts may be viewed as indirect awareness of sorts.

As we shall see, imagination is a basic function of intelligence. The observer's creative capacity, to project images in or around himself, makes possible rational acts like comparison, confrontation and hypothesizing which are bases of conceptualization, and logical induction and deduction of propositions. In practice, imaginations are *rarely purely perceptual but usually involve conceptual and verbal factors*.

> Conversely, memories, fantasies and anticipations are never merely abstract or verbal, but always involve perceptual factors. Note in particular the various constituents of our hypothesizing, in everyday pursuit of knowledge. Ideas and theories are mentally formed in reaction to information and as attempts to predict further data. Such anticipations of reality (which have to be tested eventually, of course) include not only our words' intentions or conceptual contents, but a mass of concrete memories and fantasies, which may involve visual, auditory or other constructs, and of course the verbal aspect of our abstract thoughts.

Memories and anticipations involve concrete **visual** and **auditory**, and perhaps other, phenomenal modalities. Allegedly mental visual and auditory phenomena are not counted among the objects of alleged sensory origin, because they can seemingly[12] be experienced even with one's eyes shut or ears plugged, respectively. As for the

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11 Why is it that we ordinarily live in a glorious or shameful past, or in a hopeful or frightening future, to the point that we lose all awareness of the present most of the time. Another, similar form of escape from the present is by *transcendence* in theoretical thoughts about the present. Rather than be in the present, we seem to almost automatically prefer to be out of it, in a constant stream of fantasies. This is evident in meditation, where we see that a serious effort is required to overcome this tendency. Even when we *want* to stay in the here and now, even when it is *pleasant*, we tend to fly off. Why? Phenomenology has to answer this question.

One obvious partial answer is biological. We have to anticipate the future, because we are volitional animals. We are called upon to make choices in relation to a changing environment, to protect our life and improve it. We have to remember the past, so as to avoid repeating its errors and so as to repeat the lessons learned in it. The present is interesting in both these respects, but it does not provide sufficient information. It remains true, however, that if we are unable to be fully in the present, then our past data is likely to be of equally poor quality and our future expectations also unrealistic.

Incidentally, since I consider that higher animals, at least, also have some degree of volition (though less than that of humans), I regard them as (contrary to what many people assume) not entirely locked in the present. And I think their behavior demonstrates it; e.g. our pets remember us and can anticipate some approaching events. They have this ability to see beyond the immediate moment because they too must circulate in a changing environment, etc.

12 I say 'seemingly' to remind us that eyes and ears are themselves mere phenomena, so that their materiality can only be concluded by our phenomenological ordering of data, not presumed *ab initio*.

sense-modalities other than sights and sounds, I am not sure that they are imaginable; their apparent imagination may just be an interpretation of present sensations (see below).

Another relevant feature of mental phenomena is that they are **intimate**, i.e. perceived by the observer only (colloquially, in the case of visual ones, through a 'mind's eye'), and although they do not seemingly interact with material phenomena, projections are experienced or at least regarded as due to an *agency* of the observer – signifying an act of will, a volition by a supposed soul or spiritual entity (see further on). Imagination is not *per se* a case of 'mind over matter;' i.e. material objects (except perhaps the underlying brain) are not affected. Rather, we seem to create a hologram of dots, lines and shadings – and sounds, etc. – in our inner and/or outer mental space.

Mental phenomena may be **internal** or **external**, note well. Internal imaginations seem to be located (roughly) inside of one's 'head', *as if* they are projected onto some 'matrix' there constituting an inner space. In contrast, external imaginations seem to be projected out into the outer space occupied by matter, *seemingly* sharing the same extension and intermingling without however directly impinging on it (transparency). Clearly, external projection may involve 'extrapolation'[13]. We need not consider these two categories of imagination as fundamentally different: they may in fact inhabit the same transcendent space but simply be closer or further from the observer, respectively.

External mental phenomena may be quite commonplace *hallucinations*, like having the impression that one still has one's glasses on after removing them (one still 'sees' the frames, and does not just feel the residual pressure at one's temples). But there are more extreme manifestations, like meditative or psychotic or drug-induced hallucination[14]. For example, someone may claim to be a prophet who received the visit of an angel, but in fact just have a strong power of external projection[15].

In addition to imaginations, we commonly tend to believe in another class of intimate mental phenomena, which might be referred to as '**mental feelings**,' including **moods**, perhaps **esthetic** responses, and other such subtle experiences[16]. These should not be confused with (although they may give rise to) psychosomatic sentiments, which we have already mentioned above and classified as material (in the sense that they occur viscerally in the

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13 If someone projects an imaginary star into the sky, it does not follow that his power of projection extends that far. It may go no farther than his nose, and yet 'seem' millions of miles away by a verbal or implicit assumption of perspective. Indeed, when we see actual stars, we do not see the stars themselves, but the light-front from them impinging on our senses, and then assume a play of perspective.

14 All of which are reported in literature, even if experienced by few ordinary individuals. A person who has not experienced them may of course doubt their existence, but if philosophy is to be a broad-based explication, it has to accept eyewitness reports as at least possibly true.

15 Phenomenologically, we call an entity 'tangible' if we experience, in the tactile mode, a feeling of solidity, i.e. pressure or tension (and usually other phenomena like texture, temperature, etc.), in the contiguous part of one's body. One's own body is itself considered tangible, by touching one part of it with another. Contact and shape are further ascertained and confirmed, normally by material visual experiences, or in the dark (and for blind people, I presume) by mental ones. Tangibility is also applied by extension to entities not directly touched, but interacting with touched ones, and so in principle capable of being touched. Ordinarily, an externally seen entity lacking any touch quality would be considered mere hallucination. However, some people claim that spirits (ghosts, angels, etc.), i.e. entities of a substance other than material or mental similar to that of the presumed soul of the Subject of consciousness, can be heard or seen, and (in some accounts) touched or otherwise felt. Clearly, if this were true we would have to expand and modify the present account of the phenomenal and our cognitive powers. I am sticking here to a normal viewpoint.

16 If we allow for the existence of ***telepathy*** (which I tend to admit), I would possibly include it under this heading. For telepathy seems to be awareness to some extent of the 'thoughts' of others, that is their intimate mental world. If I imagine someone about to telephone me, and he does, I would interpret this not as foretelling a future or as 'X-ray vision,' but simply as 'hearing' the person's inner voice thinking "let's call Avi" after which I project an image of that person phoning. Thus, the mental domain might be shared to some extent. The explanation could of course be more material – perhaps we can sense electromagnetic waves emitted by others. (Some animals have receptors of electric and magnetic signals.) For this reason, I leave the issue open.

body, though mentally caused)[17]. Whether we should count mental feelings as phenomenal, let alone existent, is open to debate. We could, so as to acknowledge common belief, hypothetically assume them to be perceptually discernible although very faintly and vaguely. Mental feelings, though diffuse, might phenomenally occur, like imaginations, in a mental space (extending in and around the head and body). Perhaps they are mental equivalents of material feelings, just as mental sights and sounds are equivalents of material ones. If the latter is true, then mental feelings can simply be classed as imaginations, and the parallelism between the material and mental domains is greatly increased.

> Another possible explanation of our knowledge of mental feelings might be with reference to intuition. In such perspective, they are merely expressions of the self, valuing what it has cognized with a view to eventual willing. They are not objective, in the sense of 'apart from' the self, but subjective, i.e. items of self-knowledge. (More on this topic below.)

Retrospective and prospective phenomena differ from sensory phenomena, in that the former are *re*presentative (they contain *for-other* claims, they have informational ambitions beyond themselves), whereas the latter are usually merely 'presentative' (they are to be taken *in-themselves*)[18]. All experiences are primarily data 'in-themselves,' and as such, no matter what their 'quality' (clarity, persistence, etc.), they are indubitable. Some experiences additionally appear as channels to other phenomena, as 'for-other' data, and in this role they are open to legitimate doubt.

Mental feelings (like feeling good about the world or finding a painting beautiful) and psychosomatic sentiments (like feeling warm love in your chest or fear in your stomach) may of course refer to something outside the one feeling them (i.e. may be 'referential'). In a sense, this may be counted as information about the object (specifically, in relation to the one feeling them). But feelings are not essentially intentional: they can be felt without knowledge of their object. Indeed, usually we experience a feeling, and then wonder what its object might be, and waste much time speculating, proposing alternative explanations.

(c) ***The distinction between matter and mind*** is open to discussion at this stage. Most people (at least those in our time and culture) regard matter and mind as different; this is considered a 'common-sense' fact. But in the 17th Century, the French philosopher Descartes put this seemingly obvious observation in doubt, suggesting that we have no way to tell the difference. I think he was in many respects right, but not entirely.

The *clear inner echo* of outer sights and sounds, our vivid short-term memory, is easy but of limited duration. The recall of longer-term memory of such phenomena is usually more difficult and approximate, as is the fantasy of inner sights and sounds. The following is also evident (in my head, at least[19]):

Mental *visual* phenomena seem to be more vivid and clear while dreaming or in other special mental states, than they do while normally awake. In ordinary mental states, we can usually barely imagine (reproduce or produce) vague outlines and some flashes of color; our will has little control over our inner visions. Whereas in extraordinary states, such as in strong dreams[20] or in deep meditation[21] or psychosis or under the influence of strong psychotropic drugs like LSD, our visual experiences (be they spontaneous or willed) seem more three-dimensional, intense, precise and colorful.

Mental *auditory* phenomena, such as verbal thoughts, on the other hand, seem equally strong whether we are apparently awake or asleep, or in other mental states. Clear inner sounds are reproducible or producible at will in all mental states (except, of course, in exceptional cases of amnesia, sickness or brain damage).

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17 The distinction is thus based on presumed substance and location. Often, we are not sure whether what we are experiencing is physiological (purely physical 'sensations'), psychosomatic (mentally-caused physical 'sentiments') or mental (purely mental 'feelings').

18 These distinctions are explained in my *Future Logic*, chapter 60.4.

19 Though other people seem to have better powers of visualization than me judging by reports.

20 It is interesting to note, in this context, that dreams are largely involuntary events. The Subject is present during dream as observer of them, and to a certain extent may manipulate them half-consciously, but he cannot be said to be entirely there, as when awake. So we must say that some of the images in dreams are produced by the brain without volitional interference.

21 Presumably prophetic visions, like the very vivid ones reported by Ezekiel, count as 'meditative'.

Thus, in the case of sights and sounds, there are notable similarities and differences between mind and matter, which justify our conventional dichotomy between these domains. With regard to *the other phenomenal modalities*, the differences are even greater – between apparently sensed objects, and short– or long-term memories of these, and imaginations awake or asleep or in other states.

It is seemingly impossible (in my mind, at least) to readily reproduce or produce in the mental domain phenomena equivalent to material sensations of smell, taste and touch (in the large sense), so their existence is debatable. This is at least true while awake: neither involuntarily nor at will do I ever recall or imagine, whether clearly or feebly, any of these three phenomenal modalities. I do not remember having experimented this issue while (that was long ago) under drugs, but it would be worth trying.

However, I have often noted seeming smells, tastes, touch-sensations and visceral sentiments in my dreams. However, the question always remains, did I in such cases experience these phenomena in the *mental* domain, or did my visual and auditory dream cause *physical* odors or flavors to be secreted by my body, or even just make me attentive to residual molecules in my nose and mouth, or in the surrounding air, which I then sensed and perhaps fancifully *interpreted* (verbally or by wordless intention) to fit a certain context, i.e. as required for the dream scenario under construction? There is a big difference between mentally (from memory or by fantasy) projecting such phenomena, and mentally reinterpreting physical phenomena as mental phenomena.

> The issues involved can best be illustrated with reference to an erotic dream, because that usually involves all the phenomenal modalities. For example, suppose I dream of making love to a beautiful girl:
>
> When I awake, I get the impression that the visual and sound aspects of my dream (the girl's features, her verbal expressions of joy, etc.), and the smells (her skin), tastes (her saliva), touches (our bodies embracing) and emotions (our feelings for each other), were all *inside* the dream. But upon reflection, it seems to me rather that the two sources of information (the mental and physical) were in fact quite separate. Although some mental aspects may be stimulated by physical ones, and vice versa, each remains in its own domain. Only, we 'mix' them intellectually, so as to give ourselves the impression that they occur in the same domain.
>
> Her face and her voice have to be imagined by me, but the points of contact between us need not be imagined, because it suffices for me (in my sleep) to concentrate awareness on my lips or my sex organ to obtain an about equivalent sensation. I thus ask: were the feelings of having sexual intercourse with her and feeling love for her *in* my dreams (like the sights and sounds of it), or was I just feeling my sex organ *physically* rub my underwear and experiencing *newly* generated sentiments of desire and pleasure?

This question is difficult to answer, but as we shall see our apparent ability to 'recognize' such phenomena seems to logically require and imply admission of their mental 'reenactment' at least as faintly perceptible memories. Though perhaps such recognition can be explained entirely with reference to the intuitive faculty, somehow.

It thus seems evident that 'sensed materiality' and 'the mental stuff of dreams' are not quite as similar as Descartes and others imply, in their critique of the common-sense view. The two domains have *some* phenomena of light and sound in common, though not always of comparable quality (i.e. intensity and clarity), and certainly not with equal volitional properties. Other phenomena occurring in the material field have no apparent equivalent in the mental field. And so forth.

> Another difference worth noting is that the memory of dream experiences is usually more elusive and tenuous than the memory of awake experiences. Personally, upon awakening I may remember brief flashes of my dreams, but almost as soon as I try to remember more, I forget everything! However, it should be noted that, according to yoga teachings, one can train oneself to clearly recall dreams, by sustained daily effort (including perhaps writing down what one does recall). Thus, my own ineptitude may just be due to my essentially indifferent attitude to dreams[22].

22 Which is probably unjustified, considering how surprisingly weird or richly imaginative dreams sometimes are. One wonders how a person ordinarily so incapable of spinning a story or composing a painting would suddenly in sleep succeed in such artistic feats!

All this is, of course, very close to the common-sense view. What is the essence of 'materiality' if it is not precisely resistance to personal bodily pressure or pull[23], i.e. specifically a touch sensation upon contact between some part of one's body and another body (or another part of one's body). If this, as well as various other differences already mentioned, were equally producible 'in the mind' (at will or as memory recall) the domain of matter would not seem at all different to us from that of mind.

Thus, in conclusion, I very much doubt the Cartesian contention that the mental and material domains contain all similar phenomena. They simply do not. Matter and mind may have seemed indistinguishable due to a hasty generalization. An equation might be justified as a starting position, but has to soon be abandoned once a distinction between mind and matter is introduced to account for observed qualitative or behavioral differences. If our above analysis of differences in the phenomenal modalities present in these two domains is correct, we would indeed be justified in distinguishing the mental matrix from the physical world as an explicatory hypothesis.

One *could*, even admitting the above objections, maintain that awake living might still be dreaming. Specifically, one could say that there are (at least) two kinds of dream, the *primary* dreams (which we call awake living) in which touch, smell and taste are experienced, and so on (listing all distinctive features), and *secondary* dreams (which we regard as occurring in sleep or under other specific conditions like drugs or natural chemical imbalances), which are dreams *within* the primary dreams, and which are distinguished by *a more limited range* of phenomenal modalities.

The position is consistent, so that Descartes' doubt remains legitimate, and even the idealistic posture of Berkeley and others. There is a Buddhist saying to the same effect, that: "Mind is a dream that can dream that it is not a dream."

However, one could upon further reflection argue that that position *involves a stolen concept*. The meaning of the words dream or mental is grasped *as against* the awake experience that we call materiality. If, as the Berkeleyan posture does, we dissolve the distinction, and call everything dream, then the word dream loses its initial meaning. The whole impact of idealism (or mentalism or subjectivism), the provocation inherent in it, is due to our previous experiential grasp of materiality (as hardness, etc.) as distinct from mind-stuff; if we honestly *started* with the consideration of 'external objects' as mental just like 'inner objects,' there would be no shock value.

That is, there would be no *comprehensible* distinction between the words 'matter' and 'mind.' That we understand something different by each of those words shows that their content is different for us and justifies maintenance of a distinction. Matter may be a specific category of mind, or mind may equally well be a very subtle form of matter, but in any case they *as experienced* are qualitatively different objects in many respects, and those differences cannot legitimately be swept away in one go, as Berkeley and the like do.

2. The Objects of Intuition

Intuitive objects, i.e. the 'things' we intuit within ourselves, are also (as we shall now argue) to be counted as concretes, evident givens, or experiential or empirical data, on the basis of which knowledge is gradually constructed.

Our above attempt to parse experiential data into 'material' and parallel 'mental' phenomena of various modalities and qualities, is obviously incomplete, in that it does not reflect all the items found in ordinary belief (whether the latter is ultimately right or wrong). Many of our common abstract ideas and statements relate to more intimate data, not included in the above list. This suggests the need to postulate an additional class of objects, of immediately apparent particulars, like percepts (material or mental phenomena), and yet not as manifestly displayed (colorful, noisy, etc.). The type of consciousness by which such appearances may be supposed to be apprehended may here be called **intuition** or **apperception** (although in practice, note, people often broaden the term 'perception' to include such self-experience).

23 Of course, later, Physics will explain the solidity and cohesiveness of physical entities with reference to fields of repulsion or attraction.

Under this heading, I here refer to things and events such as: one's own **cognition** (I know what I am experiencing or thinking, what I currently believe or remember), **volition**[24] (I know what I willed, i.e. I was aware and remember I 'caused' the act), **imagination** (this is my imagination, I imagined it – even if in some cases I have had thoughts and dreams beyond my control), **valuation** (I like her, I want her, etc. – what might be called 'intuitive feelings,' leaving aside their eventual phenomenal effects, like feeling lust for her or enjoying sex with her), or again the intuitive sense of '**I**', of being an *observer, judge and actor* at the center of cognition, valuation, volition, imagination (I know that, I value this, I did so, I imagined so and so).[25]

If we reify such presumed objects of cognition, we might be tempted to refer to them paradoxically as 'concrete abstracts' or 'conceptual percepts', or the like, because they seem to have a dual character, as it were straddling the domains of perception and conception, of concrete and abstract. More precisely, such apparently introspected certitudes (relating to 'oneself'), on the one hand resemble abstracts, in that they have *no expression in the listed sense-modalities*, but on the other hand they apparently share with phenomena the properties of *immediacy* (i.e. their being directly cognized, *without assistance of a reasoning process*) and *particularity* (they are *individual* objects, not common features). For this reason, it is best to regard them as a separate class of concrete objects, to be called intuitive appearances[26].

We are here considering the most inner of internal cognitions, where the observer observes himself (or herself) and his (or her) most intimate deeds – the awareness of anything, all volitions (i.e. the first move in all actions, be it the willing of imaginations or of bodily movements) and valuations (preferences, which are not actions but presumed inner *antecedents of* actions). Intuition differs from the objects of imagination (including memory and anticipation, eventually mental feelings), in that the latter are the *products* of the imaginative act, whereas intuition has as its object (among others) the presumable causes of the imaginative act, i.e. *the Agent and the agency*. Such intuitions constitute literally **subjective knowledge**, in a non-pejorative sense of 'in or part of the Subject', in comparison to which other mental events, viz. memories and fantasies of whatever sense-modality, are quite 'objective,' i.e. the latter are neither the Subject, nor creases or movements within him, though they are indeed often regarded as *caused by* the Subject.

> The pejorative sense of 'subjective' is of course that the Subject or consciousness cognizing something is thereby creating that thing (as one creates imaginations), and that this thing exists only in or through such artistic cognition. But if one says that *everything* cognized is imagination, it follows that this very statement about cognition is nothing but a fantasy too. So we cannot do that, logically; sure, we can put the words side by side, but their intended meaning is in fact self-contradictory. The correct view is therefore that *some* of the objects of cognition exist independently of cognition, they are objective. In this sense, not only are material and mental phenomena objective, but so are putative abstracts relating to matter or mind, and so even are the putative objects of self-knowledge (soul, cognitions, valuations and volitions). These are all placed in the role of *objects* in the event of cognition, and could exist without such cognition (though in some cases their lifespan might well be equal to the duration of that cognitive act, of course).

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24 Volition has subclasses. *Intention to do* is a readiness for volition, to be carried out when opportunity arises. *Velleity* refers to inchoate volition, a beginning of volition not (or not yet) fully carried out. Velleity occurs under various circumstances: one may be indecisive or have conflicting wills, or one's will may be opposed by involuntary factors or tendencies. One or another force may dominate, and the losing volition is then called a velleity. These are details for Psychology to consider.

25 Many psychological concepts intermingle the broad classes of cognition, affection and volition. For instance, *imagination* is volition (as well perhaps as involuntary generation) of mental objects that are then perceived. *Intention* refers to the purpose of volitional action, and involves some imagination of the desired (valued) goal. Volition without intention is rare, if at all possible; the existence of *motiveless* voluntary actions (which might be called *whims*, non-pejoratively) is an issue. *Behavior-pattern* refers to a bundle of volitions. Again, *attitude* refers to a predisposition to volition, implying the possession of certain values, without implying that it is currently put into action. *Character-trait* signifies a bundle of attitudes. And so forth. Cognition is of course a presupposition of all these concepts, at least for humans.

26 I hesitate to coin a neologism like 'appercepts.'

'Introspection' in a broad sense includes apperception as well mental perception. Similarly, a broad concept of 'mind' would (and ordinarily does) include not only the mental phenomena listed earlier, but equally the observer him/her self and his/her most intimate expressions (awareness, willing, preferring), i.e. all objects of intuition. It may be that the latter are not essentially different from mental phenomena, i.e. that they display very fine, very subtle, very subliminal, very faint – almost but not totally imperceptible – phenomenal qualities; in that case, intuition would be regarded as a kind of deeper inner perception. I leave the question open.

Note well that to adduce such 'intuitive' objects is not to admit just any fanciful candidate for membership in their class. If it is legitimate to (at least hypothetically) admit *self-knowledge* as an additional faculty akin to perception, it does not follow that all other claims to intuition or intuitive appearances (such as direct awareness of God, or reading other people's minds, etc.) are offhand logically guaranteed (or excluded). In my view, we surely have to admit the observer's claims to direct knowledge (experience) of and about himself (or herself); but with regard to other claims there is no such certainty.

> It is not because I see and feel my hand move that I think and claim I moved it – if I exist and moved my hand, then *I* have to know I moved it because my will to do so came from *me* (the hand movement being but a distant consequence of that). We give this kind of circular argument (which Buddhist philosophers would reject, denying existence of a self) merely to express that inner certainty, not as a justification thereof. It is here claimed to be evident data, not interpretation. Sometimes, such inner movements or states (metaphorically speaking) are uncertain; one may well honestly report "I don't you know if I believe or want or did so and so", but this too is a case of self-knowledge!

As earlier mentioned, Buddhists, presumably on the basis of their meditation experiences, claim that the self (and thus *its* having attributes and powers of agency) is an illusion, a conventional (i.e. conceptually generated) shell with nothing (emptiness, vacuity) at its center. Be that as it may[27], our interest here is to describe man's thinking processes as they appear within ordinary thinking, and these seem to include intuition of self and of expressions of self. Consciousness somehow appears to us as having a Subject; and cognitions, valuations and volitions somehow seem to 'belong to' and be 'acts of' that Subject. On this basis we construct propositions like I believe, I prefer, I do, etc. If such objects are not granted some credible reality and knowability[28], then all statements of this sort are meaningless and to be excluded at the outset from all human discourse. What shape grammar would then take, I do not know; no one has proposed a convincing model. Fact is, philosophers who deny such propositions theoretically, nevertheless continue to discourse in such terms in practice!

3. Correlations between Experiences

We correlate experiences in various ways. There are apparent **correlations between sense-modalities**. This refers to the associations we record and rely on between sensations in the material domain, in various combinations. For example, the *sight* of my hand in contact with something with such and such a shape or texture is associated with the *touch* sensations that accompany it.

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27 It is I hope clear that what is at issue here, when we speak of a Subject, is not the body or even personality traits of the presumed Subject. The body may be a receptacle of the Subject, over which he has special privileges, but it is not part of him. Personality refers to socially visible aspects, the body, its lines and motions, superficial attributes and actions. Character traits or behavioral tendencies, in contrast, may be considered more indicative of the Subject, in that we refer by them to certain uniformities in his attitudes and volitions over time.

28 A difficulty with the idea of self-knowledge is that it seems to require a *reflexive* relation. It is argued: an eye cannot see itself – so how can a Subject see himself or consciousness turn on itself? But the analogy here may be misleading – as eyes do not see anything, *we* see through them. A better analogy would be sensing one hand with the other hand. The soul or spirit may well be 'divisible', in that it can cognize a part of itself with another part (and therefore in stages all of itself)! I believe, for instance, that what we call (moral or intellectual) 'conscience' is precisely this: a part of each of us (big or small, depending on our personal predispositions) is reserved and assigned the regulatory task of overseeing the rest of one's states and acts. As for consciousness, we may regard the reflexive case as signifying more precisely: consciousness of consciousness of *something other than* consciousness (i.e. an iterative relation).

Very often, **correlation between the mental and material domains** is involved. In this respect, there are various possible combinations. One example is sight, visualization and touch: with my eyes closed, the visualization of my hand and an object held by it, is a *tool of interpretation* of the corresponding touch sensations. Another common complex involves sight, visualization, sound and 'auditorization:' I hear a sound apparently coming from a sight, the sight disappears from view, I associate the sound to a visualization instead; then the sound goes, I ally the images of sight and sound in my memory. Also, we have the 'gourmet' complex: the sensations in our mouth are not mere tasting, but a mix of visual images based on sight of the food before ingesting it, smelling, touch sensations of shape, texture and movement, muscular sensations of mouth, tongue and throat movements, and even the sounds of chewing!

It is important to note that what at first sight seems like *direct* correlation between sensations is often *mediated* by mental projections. We often loosely speaking refer to the different phenomenal modalities of space. That is, there seems to be a visual space, an auditory space, a tactile space, etc. We have the impression that we know analogies of space through the various sensory organs, but it is not strictly speaking the case. We in fact mentally project visual space and its properties into the other sensory modes.

We localize the tactile phenomena in our body (contacts, pains, etc.) with reference to a visual image of the body. This image is based on our external visual perceptions (through the eyes) of the body, like a photograph in memory. When the eyes are closed (or simply unused or otherwise occupied), the visual image is inwardly projected in lieu of the actual eye-vision of the body. This is used as a coordinate system, through which ***we map*** touch sensations within our body or on its surface. For instance, close your eyes and put two fingertips apart on your desk; with regard only to touch sensations there is no distance between them, they are just two isolated events. You do not 'feel' the space between them, but rather interpose a space between them by imagination. Similarly, if you run a finger over your desk, it is only by *mentally* tracing a line between its various points of contact with the desk that you can say that the finger had a continuous trajectory. The sounds we hear and other sensations may likewise be mapped in a mentally projected equivalent of space, extending out beyond one's body.

There are, of course, yet other correlations – equivalences and causal relations – between the mental and material domains. For instances, the relations between thoughts (verbal and non-verbal cogitations, based on immediate experience or memory) and sentiments (visceral feelings), or between emotions (evaluations and their mental and bodily expressions) and breath (as e.g. when it is speeded or deepened by desire or fear).

4. Conceptual Objects

The objects of conception, i.e. the 'things' we conceive, also called[29] **concepts** or **abstract appearances**, are *not* counted as empirical data (unlike percepts, and eventually objects of intuition) but must still be granted due consideration as appearances. Abstracts may be *phenomenologically* distinguished from material or mental concretes as having none of the phenomenal modalities – we cannot see them, hear them, smell them, taste them or feel them in any way, on a material or mental plane. Abstracts may also be distinguished from objects of intuition, in that they are not particulars. Abstracts are *the assumed common features or measures or degrees* of two or more percepts and/or intuited items and/or other abstracts in simple or complex combinations.

> Not to confuse here, the ***words*** we conventionally, by intention, attach to abstracts, which thereby and thenceforth become for us the material and mental phenomenal manifestations *of* abstracts, tools to facilitate recording, storing and transmitting of information. Words may be facial expressions or bodily gestures, visible shapes or colors, hearable sounds or touchable epigraphs or Braille – but *what* they symbolize (their intended references or meanings) may have no phenomenal qualities and no intentions.

29 Note that it is inaccurate to use the term *noumenon* as equivalent to abstract (by analogy to the equation of phenomenon to concrete), as some people tend to do. The term noumenon refers to things hypothesized to exist beyond and in contradistinction (and even contradiction) to the phenomenal world, whereas abstracts are things existing in addition to and in harmony with concretes. The noumenal is a transcendental domain, claimed without justification to be ultimate reality; whereas the abstract is essentially immanent, part of our everyday reality knowable by ordinary means.

By ‘abstract,’ then, is simply meant any object of discourse other than the phenomenal or intuited. Many abstracts seem somehow almost ‘given in experience,’ and yet they cannot be pointed-to as clearly as experiences. For instance, ‘squareness’ is something we seem to see in all phenomenal squares, whether in the outside world or in our heads; yet we cannot show it except by drawing a sample square of particular size and color. We have no access to the *universal* except through *individuals*. Thus, the conceptual is in a sense apparent, like the experiential, but its epistemological status is inferior, because while the perceptual or intuitive is immediately accessible as a singular thing, the conceptual requires a plurality of data, out of which it is gradually differentiated by comparisons and contrasts between different parts of the field of appearance, and more broadly between different fields of appearance over time.

We call abstract object of cognition any thing or relation we infer (or at least suppose or assume) by conceptual/logical means, including **terms, propositions** and **arguments**. Although they are *per se* imperceptible, and not intuited, abstracts may be (indeed ultimately have to be) associated to experiential phenomena. We might characterize them as ***rational*** objects, because *logical insight and discourse* are involved in their cognition[30]. They are end products of reasoning processes of varying type and complexity, (which may be hypothetical and probabilistic), based on and guided by (sensory or introspected) empirical evidence. What lies behind an abstract term like ‘quark’ or ‘happiness’ – what the term seems to us to refer to, what makes it meaningful to us – is what we reify as an ‘abstract’ thing. Like an experience, it is granted possible if not actual reality of sorts (while admitting that in specific cases, it can be shown that what we assumed was illusory – e.g. ‘unicorn’).

> It should be noted that I count ***logical insights*** (such as awareness that there is a conflict or harmony between different percepts, intuitions or concepts) as abstractions. They may be described as virtual ‘sensations’ of imbalance among certain appearances, whence arises in us an incredulity, a question requiring an answer, and equilibrium is recovered only when a convincing answer to the question seems found[31]. We feel ‘compelled’ by honesty to resolve logical issues when they arise. Logic is thus based on a certain affectivity, a capacity for intuition of our level of belief in or peace with certain appearances, within a specific context of knowledge and degree of attention.
>
> If we have even a mere *impression* (‘rightly’ or ‘wrongly’) that a given experience or a given hypothesis is somewhat ‘misplaced’ or otherwise ‘inappropriate,’ this impression must be counted as part of the sum total of appearances on which judgment is to be based. It is with respect to all our impressions in a given moment (however vague or clear, right or wrong to start with) that we develop considered judgments on any one of these impressions. It follows that we are correct (*ab initio*, at least) in counting logical insights as objective, in the sense that they belong to Appearance and not to the Subject. That we may also regard them as ‘feelings,’ or again as ‘compulsions’ of sorts, does not detract us from this position. It is not an arbitrary preference, but itself logically convincing.
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> Note well that logic is not, as some modern commentators have come to imagine, an issue of language or even of form (these are but technical aspects). It is primarily an apprehension of problems inherent in appearance (or between appearances), and of possible solutions to such problems. The problems and solutions are *themselves* apparent! Aristotle has identified three broad classes of logical issues. identity (acknowledgment of things as they present themselves), non-contradiction (conflicts between phenomena and their apparent resolutions) and the excluded middle (dealing with gaps in knowledge and otherwise unsatisfactory ideas).

Conception of the simplest sort has to begin with a **simple** insight, a direct consciousness of some abstract aspect of some perceived or intuited particulars. This position is needed to explain the comparisons and contrasts that

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30 I of course include here false insights or wrong logic – calling them rational is not intended as a blanket approval of all human discourse. That reason is fallible is not denied, only that it is sometimes correct and true is maintained. For to deny reason an *occasional* efficacy is self-contradictory, since such denial is itself attempted rational discourse.

31 The logical insights of incredulity (negative) or conviction (positive) may be considered 'feelings;’ but I doubt we may regard them as concrete feelings in the body or head (though they may occasionally produce sensible anxiety or satisfaction), they are rather to be classed as abstract and should be 'objectivized' as much as possible. In any case, it is clear that my view is far from a classical rationalism, which regards logic and feeling as opposites.

determine conceptualization, and likewise the logical confrontations that order knowledge. 'Similarity,' 'difference,' 'more or less,' 'contradiction,' 'consistency' and other such immediate objects, are obviously not perceptible or intuitive qualities, but undeniably abstract[32]. More **complex** conception is 'built up' from such simple conceptions, but not like bricks piled up on each other. Relations more complicated than mere 'addition' are involved, with terms inside terms, inside varieties of propositional forms, buttressed and intertwined by varied arguments.

Thus, the term abstraction should be understood very broadly as including simple insights and *summaries* of qualitative or quantitative similarity or difference between experiences; more complex conceptualization, *interpretations or explications* requiring adductive trial and error; propositional relations between concepts; logical insights, judgments and tests; deductive and inductive principles; specific logical methods and techniques of all kinds. Note well that abstraction is based, not only on similarities (as some philosophers absent-mindedly seem to suggest), but also on differences. *The negative aspect is as important as the positive*. Note that another factor, which I also often forget, is the insight of degree or proportion. Things not only seem the 'same or different,' but also 'more, equally or less' this or that. A full account of comparison and contrast must mention this quantitative aspect, which is not reducible to the polar issue of mere qualitative presence or absence.

Abstracts are unconscionable without some sort of prior experience, be it material or mental perceptions or intuitions of self. *If we had never observed anything, we would have nothing to ever conceptualize.* This is a basic principle, thanks to which many errors can be avoided. Philosophers often *use a concept to criticize or deny the very percepts on which it was originally based*, committing a variant of the 'stolen concept' fallacy. If one keeps in mind the order of things in knowledge, one will not waste one's own and everyone else's time with such stupidity. Many philosophers, out of a failure to carefully observe and fairly evaluate cognitive processes, have fallen into skepticism and peddled confusions which have caused much damage in people's minds and in society. We shall in the course of the present research review some of our core assumptions with regard to abstract knowledge, with a view to justify it in principle. What will hopefully be made manifest is that the principal justification of abstraction is its grounding in empirical data; it is not something 'a priori' or 'transcendent.'

The essence of concepts is that they provide summaries, interpretations or explanations of phenomenal or intuitive particulars. Their primary orientation is thus more objective than subjective, whether what they refer to is self or other. That is to say, when the Subject forms an abstraction about the self, it treats itself as a cognitive object like any other in that context. Also, although such comparison and contrast constitutes work by the Subject concerned, it does not follow that it is 'subjective creation;' it is dependent on a performance of the Subject, but it does not 'invent' its object.

The proposed ordering of the data, emerging from the activity of abstraction, is inevitably inductive as of when it takes longer than a single moment. For only what is given within a moment is pure evidence, whereas the putative links and other relations between moments are mere hypotheses confirmed by these moments (and others eventually), since as we have said beyond a given moment we depend on memories and anticipations. For this reason, the conceptual has a lower status than the empirical. Not as some suppose, "because the abstract is not inherent in the experiential," but because the extraction of concepts from percepts and intuitions depends on time-consuming and therefore potentially faulty processes.

Terms, propositions and arguments may therefore ultimately, all things considered, be found 'true' or 'false,' in one sense or another. The false ones may be deliberate pretenses, or sincere but unsuccessful attempts to report information. The fact that some abstractions are erroneous in no way justifies a skeptical judgment about abstraction as such, since *such judgment is itself abstract*. No one can consistently advocate the elimination of all abstracts from human knowledge. One cannot even tell oneself (verbally or in wordless intention) to stop using them, since such comprehension or collective intention itself involves abstraction. *Some* abstracts must thus be logically admitted; the only question remaining is, *which?* If the basic abstracts of similarity and difference or of compatibility versus incompatibility are understood and thus granted, there is little reason for denying *other* abstracts – for *to deny some abstracts only does not have the same force as denying them all*.

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32 And, I remind you, logically undeniable, since in the very attempt to deny them you use them and therefore contradict yourself.

Abstracts are the objects and outcomes of discourse, but should not be viewed solely in this perspective. Their epistemic role is not their whole story. They may be serious or playful, in the foreground of consciousness or in its background or underground. As already stated and as we shall see in more detail, abstracts involve and are usually in turn involved in imagination, meaning memory, fantasy, and anticipation; for instances, memory of their perceptual basis, fantasy of the words symbolizing them, or anticipation of hypotheses. Abstracts are also affected by and affect our innermost life; for instances, an emotional prejudice can affect one's philosophizing or a philosophy of self can modify one's choices.

5. Degrees of Interiority

It is important to note well, in the above dissertation, the implied degrees of interiority, with reference to 'distance' of events from the observer.

Five (or six) degrees of interiority are distinguished regarding **emotions or feelings** (taking such terms in their broadest sense), with (starting from the most distant):

(a) sensations felt when one touches something with one's skin or in one's mouth or nose (these might not be counted as emotions, but one is said to feel them);
(b) visceral sentiments, pleasures and pains experienced as *in the region of the body* (including the head), whether through purely physical causes (e.g. the pain of burned fingers or hunger or a stomach ache after eating something hard to digest or a headache due to noise) or due to mental causes (or psychosomatic – e.g. fear felt in one's solar plexus or sexual enjoyment or the warm feeling of love in one's chest);
(c) 'mental feelings,' i.e. concretely felt, not in any bodily location, but in the mental plane, if such things can be said to exist;
(d) eventual mental representations (as memories, imaginations, dreams) of these sensory (and possibly mental) experiences, thanks to which we can remember and recognize them, and often evoke them;
(e) the self-expressions of the Subject, the attitudes implied by velleities and volitions, the value-judgments or valuations implicit in his choices; and
(f) abstract implications of behavior and of introspected emotion (of the preceding four types), known by reasoning processes.

A particular emotion (mood, urge, whatever – any 'affection') to which we give a name, is usually *a complex of many or all of these types of feeling*, relatively concrete and passive ones like (a), (b), (c) or (d), or relatively abstract and active ones like (e) or (f). Rarely do we refer to ultimate units of emotion alone. By distinguishing the various meanings of 'emotion,' we are better able to analyze and understand particular emotions. For example, "I am in love with her" cannot be reduced to pleasant feelings in one's 'heart' or in one's sex organs or even to self-knowledge of one's abstract evaluation. 'Being in love' may mean that one experiences concrete sensations (the feel of her skin) and sentiments or mental feelings (pleasure, desire, admiration, pain, fear, guilt, shame, pity, etc.), while in contact with or when thinking of the person concerned, or it may refer to a very platonic direct (I like her) or indirect (she's nice, worthy of love) evaluation and a resolve to a certain line of action (doing good to the person loved), or both (usually). One's consequent voluntary and involuntary actions (over a long term) would also be considered important empirical tests and indices, relative to which one could objectively judge whether and to what degree love effectively exists or is pretentiously claimed (a fantasy).

The knot of emotions may, for instance, be iterative, with observation of certain conjunctions of sentiments or deeds causing additional sentiments (for instance, one may feel guilt in view of one's desiring or kissing someone). Also, one may have conflicting emotions; there is no 'law of non-contradiction' with reference to emotions. 'I like X' and 'I dislike X' (or 'I like non-X') are not considered logically contradictory but merely, say, incoherent or at odds, in that they call on ultimately mutually destructive courses of action (cross-purposes). That is, 'I like X' (in a given respect and time) denies 'I do not like X', but does not logically imply 'I do not dislike X' (or 'I do not like non-X'). We view the soul as potentially 'a house divided', with parts of it inclining one way and others inclining other ways. Indeed, our psychology is built on fragmentation between our 'conscience' charged with moral supervision (to different extents, according to the person – some may even have no such reserved segment of self) and our impulsive tendencies (which conscience may disapprove).

Returning to degrees of interiority, the same distinctions apply to the allied faculties of the human psyche. We have of course **cognition** of the five or six types of 'emotion' listed above – they do not just exist, they are cognized by the Subject. And similarly, **volition** can be viewed at various levels or depths. If I move my hand, I can focus on the tactile or visual sensations of my hand, the feeling and sight of its motion, or the pleasure or pain such motion may give rise to, or the visual imagination of my hand moving (with eyes closed), or the purpose or causes of its movement (i.e. on the mentally projected achievement sought by such movement, or on the conceptually supposed processes by which it occurs), or lastly on the intuited act of willing. A particular volition may involve any or all of these aspects.

Strictly-speaking only the most inner act of willing, known by self-knowledge, may be labeled as volition – all subsequent events are regarded as mere effects of it, mental or physical reactions to it. The will is never involuntary, only imagination or bodily movement can be involuntary. In the mental realm, images can be projected involuntarily, as in dreams. In the physical realm, forces outside the body can move it and it may have internal dysfunctions (e.g. paralysis) or missing organs (e.g. a cut hand). Whereas the presumed will (within a limited range) is always within our power, a free act of the soul, and the first act in any 'volitional' series. Thus, volition as such is regarded as a spiritual act impinging on the other two domains, the mental matrix of imagination (which matter can also impinge on) or on matter (which imagination per se cannot however impinge on).

These domains cannot directly or mechanically impinge on the spiritual, but only through their cognitions by the Subject. *Cognition* is always (or at least usually) antecedent to volition, giving the Subject issues to respond to, but not determining the response. Cognition gives rise to value judgments and attitudes of the Subject, i.e. events in the spiritual realm. But even these subjective antecedents of volitional action do not definitively determine volition; the Subject still has to will an action in the direction they suggest. Cognition (and its objects) and valuation (or more broadly, emotion) are thus said to '*influence*' actions (make them more likely than others), but only volition can be said to *determine* actions. 'Volition', thus, refers most precisely to subjective movements of the Subject – he is their sole cause, in the sense of *Agent* (or Author or Actor). Such movements have no existence without the Subject, they are not end products of his acts, they *are* his acts. He is directly responsible for them, their perpetrator. Subsequent events (e.g. hand moving) are not volitions, but (usual) effects of volition, though loosely called 'volitional'. For the latter, he has (usually) only indirect responsibility, for other forces can affect them.

By means of the stratification of objects here proposed, we are better able to understand what we mean by freedom of the will. But deeper considerations of causality and causal judgments shall be dealt with separately.

4. Conceptualization

In the present chapter, we shall try and clarify the processes of conceptualization, i.e. how we develop abstract ideas from the data of experience. Many philosophers have previously attempted this difficult task, but have strayed into error or irrelevancy due to their failure to grasp all the logical issues involved. We need to explain how comparisons and contrasts are effected, without engaging in circular reasoning. We need to show that logical tests are not arbitrary standards, as some accuse, but constitute the only honest and sane way to assess any data input. We need to clarify verbalization, and ensure that it does not skew our ideas. We may also try and propose a theory of 'universals.'

1. Sameness and Difference

Alleged apprehensions of sameness and difference are the primordial basis of all concept-formation, that is of grouping and naming or classification. These are of two kinds, *particular* sameness or difference, which relate to purely perceptual (material or mental) or intuitive (self-known) items; and later *abstract* sameness or difference, which relate to conceptual products of the former. Or we could say more precisely, sameness and difference on a particular level are the foundations of abstraction, i.e. whatever we judge same to each other and different from other things become thereby members of the *first* abstracts, all others being ultimately *derived* from them.

An important insight or principle we may suggest at the outset is that **similarity is not something we apprehend – it is *dis*similarity we apprehend; similarity is just the absence of dissimilarity**. Thus, despite the polarities we have given the words, similarity is something negative, whereas dissimilarity is something positive. Everything seems the same to us, till we discern some difference. We judge things singular or same, if we have noticed no plurality or difference between them. Thus, strictly speaking, dissimilarity can be experienced, whereas similarity is a rational object.

Let us first consider certain percepts (material or mental objects of perception) in the visual field (specifically, shapes), and then we shall turn to other visual percepts, as well as auditory percepts and those in other sense-modalities.

When faced with two visible *material* percepts (phenomena appearing *at the same time* in the visual field), we 'compare' them mainly by mentally projecting (externally imagining) parallel lines from points on the one to points on the other (the points being imagined subdivisions of the phenomena, into light or dark dots – digital 1s and 0s). If all such lines pair-off dots which are both alight or both dark, the objects are judged to be completely similar (identical); if no dots thus correspond, the objects are judged completely different, if only some correspond, the objects are judged in some respects *same* (similar) and in other respects *different* (dissimilar). There are thus *degrees* of sameness or difference.

Such **comparison** (in its widest sense, including both comparison with the positive aim of finding points of similarity and that with the negative aim of finding points of dissimilarity, i.e. 'contrast') thus involves an imaginative act (specifically, a hallucination of mental lines into the material region of space), but its result is given by the visual phenomenon (there evidently are or are not pairs of light or dark dots at the two ends of the lines).

Another, less direct way we compare visual material objects is by externally projecting a mental image of one object (usually one perceived previously, whose image is thus stored in memory) onto the other material object (currently present in the visual field). Such *juxtaposition* primarily occurs when the two material objects are not simultaneously present, or so far apart in space that focusing on one turns one's attention away from the other so that they cannot strictly be regarded as sharing the same visual field at the same time. In such case, we overlay an image of one object on the other, and consider and count how many dots cover each other over and how many do

not[1]. Here again, an imaginative act is involved (projection into external space of a mental image or memory), but the judgment is based on passive observations.

A third, still less direct way is to compare and contrast mental images of both the material objects under scrutiny – this may be used for instance if neither object is present long enough, both being too ephemeral. Other ways are experimental: the observer may seemingly move himself relative to the two objects so that they are in the same line of vision (appeal to perspective) or seemingly move one object so that it is physically on top of the other and blanks it out in every direction[2]. Such physical experiments do not per se involve mental projections.

In practice, all these various ways might be used in combinations, reinforcing each other or mitigating our judgments somewhat (as to the degree of similarity and dissimilarity). Physical experiments may be criticized as actually changing the visual field, in that what is compared after said movement is not the original scene, but a new scene – in which case, we have to in fact appeal to a memory (i.e. a mental image) of the object moved, juxtaposed on its alleged new manifestation, and judge the two as the same by an inference (image 1 is like object 1 and like/unlike object 2, therefore objects 1 & 2 are like/unlike). Therefore, even such experimental comparisons involve imagination.

In addition to comparisons of shape, we must consider comparisons of size – that is, the *measures* or *degrees* of things. Two things may have the same shape, but different sizes. To deal with this problem, we introduce the concept of *proportion*. Comparative measurement is an experimental act in that, in imagination or physically, we bring to bear a standard of measurement, a graduated measuring rod. In visual imagination this simply means that, instead of comparing dots (as above), we compare collections of dots – dashes (lines of two or more points), while ignoring or making note of the differences in their numbers of constituent dots (according as we are satisfied with imprecise proportions or need to be exact).

Considerations of 'scale' often involve a mental act of 'zooming in.' In *Buddhist Illogic*[3], I state:

> Now, the zooming in is merely production of a new image – so we are not even, in fact, repeatedly subdividing the same image; we merely *say* 'suppose this image is a detail of the preceding.' The new image has the same size as the preceding, but its *scale* is declared different.

It is worth stressing here that this declaration need not be verbal, and is more precisely *an intention*. That is, we intend some visualized line to be considered as *a portion* of another visualized line, even though both lines are in fact (about) the *same* size when projected in our heads. Neither the mental projection of images, nor a verbal declaration, can fully explain 'proportion' – we additionally must, note well, refer to the *intuited* intention that this line 'represents' a fraction of that line. Thereafter, we can specify how many such fractions would equal the whole.

The mental drawing of lines first mentioned may also be criticized as taking time and involving shifts of attention, so that by the time the lines are drawn it is no longer the original two objects that we are comparing but our many mental images (memories) of them. However, these various images have each in succession passed the test of correspondence with their original objects (image 1 matches object 1, image 2 matches object 2) – we express this fact by calling them '*representative*' – so that we may justly infer the resulting judgment (that objects 1 & 2 are the same/different) from the equality or inequality of their images. In conclusion, the comparison and contrast of material objects may well generally involve mental projection of images of their objects, though many rely mainly on projection of lines between objects too.

It should be mentioned that visual experiences do not only involve shapes, but also light-intensity (shadings) and frequency (colors). How for instance do we recognize various colors as all green, say, although they range noticeably? For such qualities, an argument by analogy seems called for. It is also by analogy that we must here

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1 In such case the mental projection does not entirely blank out an identical material object, but effectively hides it sufficiently.

2 The smaller one will be placed relatively closer to the observer than the larger one, and both may be gradually rotated, so that all their 'sides' are effectively juxtaposed and compared. Such manipulations are regarded as mere *positioning* of the objects, and granting the hypotheses underlying perspective including continuity of adjacent phenomena the objects themselves are not affected thereby.

3 In chapter 5.

try to explain comparisons with respect to the experiential fields of *the other sense-modalities*, sounds, smells, tastes and touch phenomena. Presumably, we mentally cut up the experiences into elementary phenomena, which we then compare to each other or to imaginary substitutes, or experimentally determine in some way (e.g. at later stages in development, we could record sounds into a computer and have it project on its screen visible waves which mathematically correspond to the sound waves concerned).[4]

Whereas material phenomena of light or sound have obvious mental equivalents – we can think visual images (including colors) or speak to oneself (i.e. in one's head) at will – it is not immediately evident that we can produce mental images (memories) of smell, taste and touch phenomena at will while awake (though my own introspections suggest they do occur in dreams while asleep). Be that as it may, unless we can think up some fitting alternative theoretical scenario, we have to assume the doctrine that imagination (or at least memory) of these sense-modalities is possible, since we evidently are able to *recognize* such phenomena![5]

We should also consider comparison of *mental* objects of perception. With regard to the visual field, first, internal or external imagination of lines, joined at will from point to point of any two objects, would be a sufficient hypothesis. There is no logical need, here, to produce a mental image of either mental image, since just as soon as the primary mental objects are thought of (with a view to compare them) they are present in the mental visual field and such imagination would be redundant. But one can, rather than mentally draw lines between them, mentally move one mental object over to the other, juxtaposing them for point-by-point confirmation of similarity or difference. Such moving seemingly does not require further confirmation by images, since it is as it were guaranteed by the observer's introspected will. Similarly supposedly for the other sense-modalities.

Comparisons and contrasts between intuited particulars, on the basis of which abstracts concerning the psyche are assumed, are more difficult to trace. They evidently occur introspectively somehow, but I cannot at this stage suggest just how, so I will leave the issue wide open.

The above-mentioned first abstracts are only among the most basic. From their application a whole world of more specific or generic abstracts is gradually inferred, adduced or assumed. For example, there are also, we assume by analogy from phenomenal and intuitive feelings, 'abstract feelings' inferred from the value judgments and behavior patterns of the observer. These are not to be confused with pleasure/pain[6] sentiments (which are physiological phenomena, i.e. concrete material phenomena experienced within the body), which may occasionally be caused (we believe) by abstract feelings. Nor should we confuse these with what I have earlier named 'mental feelings' (if any such exist) and 'intuitive feelings' (which are raw data for abstraction). Abstract feelings are hypothetical entities, stretching terms by analogy; they are more judgmental, or rational in nature.

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4 It should be kept in mind, in this context, that color, sound, odors, tastes, touch-sensations and feelings all seem to have spatial as well as temporal aspects, which give rise to our *correlations of sense-modalities*. Thus, the sense of depth in the surrounding material world is not only due to perceptions and conceptions of perspective, but also to various sound and touch sensations, which add body to visual depth. The sounds or smells we experience have direction, with reference to movements of their external source in space or of our body relative to it. The food we eat has a location and shape/size and texture in our mouths and tongues, a hardness or softness and certain sounds under our teeth, not just a taste and smell. Such inferences of spatiality are based on very complex hypotheses involving both perceptual events and conceptually assumed causes and conditions.

5 For instance, I can recognize a smell as that of a rose, i.e. as similar to smells previously experienced and classified as rose, even though I don't seem to be able to reproduce an 'image' of that *smell* in my head at will. But interestingly, in a dream I might apparently 'smell' a rose, though none is nearby. No doubt also, different people have different facilities in respect of perceptualization. I am sure some people can visualize things in their heads better than me, so maybe some can actually imagine the smell of a rose.

6 *Indifference* is sometimes counted as a third kind of sentiment, though strictly referring to lack of sentiment. That is of course because the absence of pleasure or pain signifies underlying value-judgments that exclude interest by the Subject in the object concerned. Additionally, we should note that some sentiments are of *uncertain* polarity, i.e. we find it difficult to say whether they are pleasure, pain or perhaps both at once. This is said apart from the fact that one thing may *cause* opposite sentiments, as e.g. when a masochist is whipped and feels both pain in his back and sexual pleasure. I here mean that one and the same sentiment may be ambiguous (so that the Law of Non-contradiction may not be applicable with reference to pleasure and pain, i.e. they are not strict contraries). Similarly, and all the more so, with regard to abstract feelings.

With regard to cognition of more abstract sameness or difference, then, we should in principle regard our identifications as *hypotheses subject to the laws of adduction*. The concepts of concrete sameness and difference are by analogy extended to include presumed/alleged/postulated abstract sameness and difference. We do not directly 'see' abstracts as same or different, as we do concretes. Rather, we postulate that something akin to sameness or difference relates two given abstracts (respectively inferred as above described), and then test this theory by adductively confirming or rejecting it, in competition with conceivable alternatives. The process of comparison is here less direct, and less permanently sure in its results.

In practice, the objects we compare are rarely simple visual shapes, but complexes with many aspects. All the above-described concrete processes, and additionally many abstract ones, will be called upon in tandem for any given act of comparison. So it is difficult to describe comparison in a succinct manner. For instance, let us compare two carpets on my living room floor. I can basically relate them in respect of their rectangularity by drawing lines from the corners of the one to those of the other. This is possible even if they are different in size or differently placed, by calling on perspective adjustments. But if one were round and the other square, this would be inconclusive, and I would have to refer to their color or texture (a touch phenomenon), or more abstractly to their fabric (wool or cotton) or even their function (warmth, decoration, etc.). Or comparing two trees, I would not expect their overall shape to be always similar, but would refer instead to bark and leaves, or cells viewed under a microscope, or more abstractly to observed biological processes (themselves complex).

In conclusion, sameness or difference are geometrical judgments at the simplest concrete level of visible shape, but at more complex levels, other sense-modalities as well as abstract hypotheses and inferences (themselves somewhat based on previous concrete experiences) are generally taken into consideration in determining sameness and difference[7]. Nevertheless, I have attempted here to postulate a scenario, which would credibly explain how we apprehend sameness or difference, already to some extent, at the simplest concrete level. I personally see no alternative explanation yet, and so regard it as a good working hypothesis, justifying our comparisons (to the extent that we have been attentive enough, of course). It is acknowledged, however, that even apparently simple cases are usually far more complex in fact, and it is difficult to describe such processes precisely, as they vary tremendously (involving many sense-modalities, and conceptual/logical work too).

Direct or indirect comparison/contrast may be considered as principles of logic, insofar as it is on their basis that we begin conceptualization. Once percepts of any kind are thus declared same or different in certain or all respects, we mentally *group* their images in our minds (probably more precisely, link their memories in the networks of our brains) and, usually but not always, *label* them with a name (i.e. a physical or imaginary sound – and in the case of written language, a visual symbol). The value or utility of naming is that it provides us with an easily invoked substitute for experiences difficult to bring to mind (like smells, tastes or touch phenomena) or more abstract concepts.

> It must be emphasized that the mystery of sameness and difference cannot (as some philosophers have tried) be explained-away by just saying that the arbitrary names we give to things are their only common grounds. Logically, this hypothesis begs the question, in that names *too* have individual instances, which must be judged same or different!

The prime concepts resulting from such grouping and naming (effectively these are propositions, like 'x is same to y, therefore both shall be symbolized by z') may then serve as objects in eventual derivative 'abstract' comparisons, which in turn may yield more abstract ones still, as classification progresses higher or deeper. It should be clear, at least if the above explanations are naturally convincing, that the role of imagination in comparison processes does not detract from the *objectivity* of the sameness or difference concluded. The mental projections involved do not affect the material objects they try to represent (and are shown to do so by matching) – they are not 'mind over matter' type volitions, arbitrary manipulations – they are merely juxtaposed. For this

7 How precisely that occurs with regard to the other sense-modalities is admittedly left vague. We should regard comparisons and contrasts in these sense-modalities to be less reliable. Ultimately, I think, we have to refer to a theory that these other sense-modalities consist of vibrations subliminally perceptible to some degree by being somehow reducible to light phenomena, comparable with reference to correspondence of dots. Similarly with regard to intuitions.

reason, we can fairly regard our prime concepts (and their eventual derivatives by inductive logic) as 'empirically' based and epistemologically justified.

2. Compatibility or Incompatibility

Allied to sameness and difference are the concepts of compatibility or incompatibility, which underlie what Aristotle has called the three 'laws of thought' – identity, non-contradiction and exclusion-of-the-middle. How do we apprehend things (percepts, intuitions, concepts and propositions about them) as able to coexist (compatible) or as unable to do so (incompatible) or problematic (not established as either compatible or incompatible)? We must answer this question urgently, if we admit that these logical processes of **confrontation** (or facing-off) are as basic as those of identifying sameness or difference. The whole of logical science is built on their assumption, and we must explain how we know two things to be harmonious or mutually exclusive or of undecided correlation.

An important insight or principle we may suggest at the outset is that **consistency is not something we apprehend – it is *in*consistency we apprehend; consistency is just the absence of inconsistency**. Thus, despite the polarities we have given the words, compatibility is something negative, whereas incompatibility is something positive. Everything seems harmonious to us, till we discern some conflict. We judge things consistent, so long as we have no logical insight of inconsistency between them. Thus, strictly speaking, inconsistency can be directly 'seen', whereas consistency is normally assumed till found lacking. In some cases, consistency is indirectly put in doubt, without some direct inconsistency having been found, so that an uncertainty arises.

Aristotle formulated his three 'laws' firstly with reference to percepts or concepts by stating them as 'A is A', 'A cannot be non-A' and 'Either A or non-A'. In a later stage, they are formulated with reference to propositions. As I argue extensively in *Future Logic*[8], these laws are not laws in the sense of a-priori principles or arbitrary axioms, as some have claimed, though they are self-evident in that to deny them is self-contradictory[9], but have to be regarded as given in their objects somehow. Psychologically, they are profound impulses (which may be ignored or followed), which make humans rational; ethically (in the ethics of knowledge gathering), they are indispensable tools and imperatives to actively respond to certain epistemic situations in certain ways (though one can be dishonest or unaware and ignore the facts, or evasive or lazy and ignore the imperative).

Identity brings to mind the visual image and sensation of calm or attraction or a tendency to merge of two things (equation), contradiction that of conflict or repulsion or explosive collision between them (because they cannot occupy the same place), while exclusion of the middle refers to a gap or deficiency between them (raising doubts and awakening questions). These may be imaginative representations for philosophical discussion like here, but they are not always (if ever) involved in concrete identification of identity, contradiction or research needs. Their involvement is more technical or abstract, straddling as it were the experiential domain and the conceptual knowledge domain. Although formulated as a triad, the laws of thought are three aspects of essentially one and the same necessity.

The law of identity, simply put, tells us "what you see is what you get" – it is a mere acknowledgment that the data of phenomenal experience are the fundamental givens of any knowledge enterprise; that there is ultimately no other data to base inference on, so that all their details must be paid attention to and taken into consideration in any inference. With respect to its formulation as 'A is A', with reference to terms rather than propositions, this law would simply mean that, if we for instance compare the constituent points in any two material or mental complex phenomena, we have to acknowledge that wherever dots *appear* (or fail to appear) to us, we can definitively say that there *are* (or are not, respectively) dots (at least phenomenal dots) – at least for now, until if ever the situation changes or further scrutiny tends to belie the first observation (because many later observations supplant the first, by their statistical weight).

Identity is a law, because there is no other way to conceive things – *at this phenomenal level to 'seem' is to 'be'*. You can deny your phenomenon's reality, but not its very occurrence or existence. If you try to deny your actual

8 See *Future Logic*, chapters 2 and 20.

9 See *Future Logic*, chapter 31.

phenomenon by *immediately* hypothesizing some invisible conflicting 'phenomenon' behind it (a noumenon, to use Kant's word), you are condemned to being basically unempirical and therefore without epistemological justification for your own act. You have nothing to show for your case, since by definition you appeal to the *un*seen, *whereas you must acknowledge the seen as seen to at all deny it*. The baselessness and circularity of such refusal to accept the phenomenon (*as* a phenomenon, no more, at least) merely reflects that the phenomenon experienced is the given to deal with in the first place (for this reason any denial of it is bound to admit it, implicitly and explicitly by referring to it). All such argumentation is of course very conceptual, and so only at best lately and peripherally significant in any actual act of acceptance of the phenomenon as such.

Phenomenologically, the law of identity means that an image of a material entity, mentally projected externally onto that entity, does not blank out the entity (being as it were in a parallel space, transparent). When such mental image seemingly shares outer space with the material body it is projected on, then the phenomenon as a whole has changed, though the material entity stays on (perseveres as an appearance), having been *augmented* in respect of a mental image. That is, the new phenomenon is enlarged (by an additional image) in comparison to the originally given phenomenon. This means that postulation of a noumenon merely adds a mental component (including additional phenomena) to the first presented phenomenon, and does not succeed in erasing the first phenomenon, precisely because it is introduced *in relation to* the first phenomenon (specifically, as an attempt to explain it or explain it away).

The law of identity is an impulse, a call to empiricism, which we normally obey without doubt or question. It acknowledges that appearances might in the long run change or prove misleading, taking into consideration all other appearances. It does not deny, nor accept *ab initio*, that behind the seen appearance there might be unseen or invisible events or things; but such outcome can only be arrived at through an overall consideration of all experiences and much pondering. That is, 'noumena' might well exist beyond a given field of phenomena – but they would have to be end products of an evaluative process and could not be first assumptions. Since evoking noumena does not in itself annul phenomena (merely adding more phenomena to them), the questions inherent in phenomena and their apparition to us remain unanswered.

> The reason why the thesis of noumena seems at first sight credible, is that we have experience of different sense-modalities, each implying that the others are *incomplete*, and we have memory of changes in our experience and/or its interpretation *over time*, so that our conceptual knowledge (or its suppositions) has naturally come to conclusions that '*things are not quite or always what they seem*'. But in such case, the term noumenon is trivially but another name for abstracts or concepts. In Kant's coinage and use of the term, however, the noumenon is not a hidden extension of the phenomenon, but purports to discard and replace the phenomenon altogether. The noumenon is by definition unknowable (universally) – though Kantians never tell us how come *they* themselves have the privilege to even know enough *about* it to know that it exists and is unknowable! The correct statement would rather be that noumena (i.e. less abstrusely, abstracts, concepts) are not concrete experiences, but merely logically assumed derivatives of percepts. They are hoped to be ontologically 'more real' than percepts, digging deeper into reality than the visible surface of things (to which we are supposedly restricted somewhat by the limited range of sense-modalities open to cognition), even as they are epistemologically admitted to be less reliable.

The laws of non-contradiction and of the excluded middle are intertwined with that of identity, as evident in the arguments above. But how do we know that 'A is not non-A' or that it is either-or between them? Consider our basic dot of light or its absence (darkness) in the visual field – such a dot is evidently never in contradiction with itself. We never simultaneously perceive a dot and not-perceive it – in any given place we mentally chose to focus on, there either appears or does not appear a lighted (or dark) dot. At this level, where the object is reduced to a single character (light) and precise place (the smallest possible size), we cannot *honestly, sincerely* answer 'yes and no' or 'neither yes nor no' to the question. It is there or it is not. If it seems there, it is. If it does not seem there, it is not. We cannot even pretend we don't see what we see – at least not in words, for we would have to acknowledge their meanings, and therefore the actual phenomenon.

These laws are indeed *in* the phenomenal world, insofar as positively no phenomena ever appear in contradiction or as neither-nor, i.e. by *absence* of empirical evidence to the contrary. They are in, because their negations are *not* in. But they relate to mind, inasmuch as when a dot A appears and we start speaking of the unseen non-A, *we are in fact imagining non-A in our heads*, and so bring a new (mental) element into the picture. By the law of

identity, this non-A phenomenon (which is mental) must be distinguished from its alleged opposite A (the given, which may or may not be mental), and admitted as an *addition* in the experiential field. But it remains true that A and non-A themselves are not in fact coexisting or both absent in the field – rather what we experience is coexistence of the given A with a *projected* non-A.

The law of contradiction does not deny the possibility that two *different* things might coexist, like a dot of light and the imagination (or memory) of absence of such dot of light; such things are merely contrary. The law of the excluded middle does not deny the possibility for something and *the idea of* its absence to be both absent from a field of experience; in such case, we can still suppose, as we indeed *see* as experience, that the thing itself is absent (even though the idea of its absence is allegedly absent – until mentioned as absent, that is!)[10]. Thus, these laws are empirical, in the sense that they do not impose anything on the phenomenon, but accept it as is. They merely push *the observer* back into the fold of experience, should he venture to stray. They do not involve a modification or manipulation of the phenomenon, but on the contrary make the observer openly and carefully *attentive to* what is phenomenal. They involve a distinction between primary phenomena (be they 'material' or 'mental'), as given *ab initio*, and imaginary alleged representations (ideas, mental phenomena) of eventual phenomena, which merely introduce additional phenomena.

It is very important to emphasize again that **negation is a logical act**. It is never a pure experience, but always involves conceptual interference by the Subject. In formal logic, terms like A and non-A are neutral and formally indistinguishable. That is, they function in interchangeable ways, so that the negation of non-A (non-non-A) is technically equivalent to A (by obversion); and we might label non-A as 'B' and A as 'non-B' without affecting inferential processes. But at the phenomenological level, these labels are quite distinct. Something appearing would be labeled positively (say, A), whereas something not-appearing would be labeled negatively (as non-A).

What we here labeled A is a phenomenon or percept. What we here labeled non-A is *not* apparent per se, but only effectively 'apparent' in that *A* did not appear. Non-A signifies that we have *asked a question* 'is A there (i.e. in the phenomenal field)?' *and after further scrutiny answered it* by 'no, I do not find it there'. The former (presence) is *directly* known, the latter (absence) is *indirectly* known through a mental projection (*imagining* A, i.e. inventing it or remembering it from previous perceptions) coupled with an experimental search (whose result is unsuccessful). Clearly these are very different cognitions – one being purely passive and empirical, the other involving an active inquiry and referring to observation only by the failure to confirm an anticipated equivalent of one's imagination. The later is useful and informative, but it is a construct.

Negative concepts or statements are thus never strictly-speaking empirical, and negation is a fundamental building block *of reason*. A negation is at the outset, by its very *definition* when introduced by the Subject as a cognitive artifice, logically contradictory to something. It cannot then be said *empirically* that both percepts A and non-A occur (since saying I 'see' non-A in the present field of perception just means I looked for and did not see A in it), nor that neither A nor non-A occur (since if I look and do not see A in the present field of perception, I would conclude non-A for it – though I may remain open-minded about other eventual fields of perception containing A)[11]. A negative concept or statement is therefore fundamentally different from a positive one, and can at best only indirectly ever be characterized as 'empirical'.

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10 Our minds seem so made that, indeed, we might consider that we always *think* non-A when we *see* A. This is not a mere perversion of the mind, it is rather an expression of the fact that concept-formation involves not only reference to perceived similarities between two objects, but also to perceived *dissimilarities* between other objects and them. Thus, in order to classify something as A, we must simultaneously declassify it from non-A. That is, the *thought* of A automatically calls forth the *thought* of non-A, for purposes of distinction. It is not that A per se implies non-A (though in most cases, A in one thing implies non-A in others, otherwise neither A nor non-A would be distinguishable in the first place), rather it is that A cannot be fully delimited or understood without bringing to mind non-A as a possible alternative (except perhaps 'non-existence' – though in that ultimate case, we can say that the term is merely verbal, without conceivable concrete referent). Furthermore, concepts formed by negation (like darkness) presuppose some relatively positive phenomena (like light), whose absence they express, having been conceived first.

11 Of course, at a conceptual level, i.e. when dealing with abstracts, we may encounter contradictions (i.e. both A and non-A seeming true) and doubts (i.e. neither A nor non-A seeming true). Here, both the positive and negative concepts are mental constructs, and so there is no guarantee that the issue can immediately be resolved by one look. That is of course

The three laws of thought are logical primaries, involved in all discourse about any phenomenon (and similarly relative to intuitive data, and at a later stage with respect to conceptual discourse itself). They jointly operate in identical ways in every observation, pushing us to admit what we see (identity), not to contradict what we see (non-contradiction), and not to ignore and add possibilities to what we see (exclusion of a middle). To fail to apply them is simply to confuse the given data with additional mental ingredients (fantasies), which neurotically either deny the evidence (mentally replacing it with its contradiction) or question it (by mentally proposing a 'middle' term). These laws can be stated as propositions, but they nevertheless have no conceivable alternatives. Any doctrine proposed has to be reconciled with experience somehow, since all discourse is a reaction to experience, an attempt to solve the mystery it presents, so merely ignoring experience does not qualify as reconciliation.

In that sense, it is accurate to say that these laws are laws of thought; they are laws *for* the mind (the observer). We may say that something is A and not A, or neither A nor not A. But these words have no meaning *in* experience, no phenomenal referents. They are just words, sounds or drawings that signify nothing, not even an imaginable circumstance. The way we 'imagine' them is to stupidly or deliberately confuse a thing and an image of a thing, and project the idea of non-A (instead of non-A itself) next to A (or next to the idea of A) or some such artifice. In other words, the propositions claiming to deny the laws of thought have only a superficial meaningfulness and credibility, due to in fact having referents (ideas) *other than* those they pretend to have (things). With regard to the original objects of perception, they are in fact silent.

Note well that application or obedience the laws of thought does not involve an imaginative act (a volition); it is on the contrary attempts to ignore or deny them which do, requiring interference of the observer's imagination in the cognitive process (preempting experience). That is, the laws of thought themselves are objective, it is only their denials that are subjective (in the pejorative sense). The laws of thought thus remain empirically, and epistemically, and therefore epistemologically, undeniable. So much with regard to applications of the laws of thought to perceptual evidence.

With regard to concepts (which derive from comparisons and contrasts, or from subsequent imaginations recombining such concepts) and propositions (imaginations of relations between concepts), they remain always open to doubt, hypothetical, so long as equally credible alternatives are imaginable. Credibility is found in everything experienced or thought, it is merely admittance that such and such has been experienced or thought (thought being a sort of experience, though mental). *Ab initio*, any two concepts or propositions are *compatible*, having both been thought. Incompatibility is a later judgment, which follows realization that the concept or proposition somehow directly or indirectly contradicts experiential evidence or leads to internal inconsistency in knowledge or is inherently self-contradictory.[12]

If two such ideas or thoughts are found or not found to be in utter conflict, they both retain the minimal credibility of being at least *imaginable*, at least till one or both of them is found incoherent with some experience(s) or for some reason unimaginable. If for some reason they are considered to be in conflict, they separately retain some credibility, though their interaction raises a doubt and it is understood that we have to ultimately eliminate at least one of them, removing its temporary credibility with reference to further experiences or abstract considerations. During the phase of doubt, we may refer to their frequencies of confirmation in experience, and regard one as more credible (or likely or probable) than the other.

> The job of Logic is, note well, not to *exclude* as much as possible, but to find ways to *include* as much as possible, so that all opinions and points of view (which all have some basis and so represent some kind of experience) are accounted for and explained or explained away. Logic is thus not merely, as some contend, search for *contradictions*, but (this in order to) search for *harmonizations*.

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where the whole science of logic comes into play; it is needed to deal with just such issues with reference to a plurality of experiences.

12 We consider concepts or propositions compatible until and unless we find some incompatibility between them. As I already pointed out in *Future Logic*, in opposition to the claims of certain modern logicians, we do not 'prove consistency' but rather 'find inconsistencies'.

3. Words and Intentions

Words are sounds, sights or touch[13] symbols that conventionally refer to phenomena, intuitions and abstracts. As sounds, sights, etc. per se, words are of course themselves phenomena, which can be expressed either materially or mentally as outer or inner speech or writing, being used for personal thought and memory or social communication and knowledge accumulation. Many words have rich natural and historical roots, but they are nonetheless conventional (i.e. arbitrarily chosen), in that they can always be changed at will by consent. Also note, the equations between word-sounds and word-sights (and likewise, felt-words) are also conventional[14].

Words evidently differ from language to language, from one population group to another. A language is a collection of words (vocabulary) used by someone or some group, in accordance with certain accepted rules (grammar). Words, for old or new things, are almost daily coined and adopted by individuals, social groups and societies. Whoever coins a word, for whatever purpose, must *intend* (chose, convene) some more or less stable signification for it. Without such an *intuitive* understanding, words cannot have any semantic content.

Words are not mere phenomena, but refer to things; i.e. these auditory, visual or touch phenomena are signs for things (phenomena, intuitions and abstracts) other than themselves. Whether the things they refer to are real or illusory, clear or vague, is not logically relevant to the fact of signification. Signification is a relation, one of equation of sorts, saying (i.e. intending, to repeat) 'when I mention this word, please think of this thing.' Words are labels, they have meaning. There are wordless thoughts; indeed most of thought is wordless. In the case of wordless thought, one is conscious of the meaning without use of the label.

Indeed, it is ultimately impossible to understand, use or discuss words without appealing to wordless thoughts. If (as some philosophers claim) words obtained their meanings only by equations to other *words*, there would be need for an infinity of words; and since that is not possible (language is limited in size, and anyway man has no time for infinite regression), the most basic of words, from which all others derive, would be meaningless; and thus *all* words would be meaningless. But to claim (in words) that 'words are all meaningless' or that 'words refer only to other words' is self-contradictory, since such claim itself purports to have understandable and communicable meaning. Such claim is thus not a consistent thesis, and can be rejected once and for all[15]. Therefore, it is logically self-evident that some words are meaningful, and that as well as words with explicit meanings, there are wordless implicit meanings.

The meanings of words, as we said, may be phenomenal objects (e.g. 'Avi' refers to an individual physical person, but also 'person' refers to all persons), intuitive objects (e.g. 'I' or 'I want') or abstract objects (e.g. 'personhood' or 'wanting'). But moreover, more importantly, ***every word implies an intuition*** – the **intention** that the word concerned be associated with such and such a meaning being itself an intuitive object. We intend the meaning of a word, not only the first time, when we coin it or learn it, but every time thereafter, whenever we use it. Without such intention, the word remains a mere noise or shape, devoid of meaning for us. Words in themselves are inert; it is our intentions that give them life and power.

Each of us knows (in the way of self-knowledge, intuition) what he means by the words he uses at a given time, whether clearly or vaguely (and whether correctly or erroneously according to previously accepted conventions). This is evident in the fact that *when we think or communicate, we do not and do not need to explicitly list out all the words in our language and map all their proposed interrelations*; thus, our discourse at any given time is

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13 For instance, blind people use touchable words (Braille); certain pre-Columbian peoples used knots in rope as words.

14 Thus, e.g. the sound of 'Avi' and the written letters A-v-i have no relation other than what we have convened for them, though that convention has a rich history that we will not needlessly ignore.

15 Similarly, the claim that words are mere conventions implies that 'knowledge is conventional' is confused. First because that proposition, as a factual assertion, claims to know something beyond convention about knowledge; whereas applied to itself, it denies the possibility of non-conventional knowledge. But furthermore, all conventions imply factual knowledge: you have to know *that* there is a convention and *what* that convention is supposed to be and *how* to apply it correctly! You cannot have a convention about a convention… *ad infinitum* – it has to stop somewhere factual.

mostly wordless and the words we do use at the time concerned must be admitted to be ultimately wordlessly intended to refer to certain things, whatever they be.

It is therefore incontrovertible that we have self-knowledge of our intentions, with regard to words at least – i.e. the fact of intuition is unavoidably implied at least by the fact of language. This is an interesting and important *rational proof of the existence and knowability of at least some intuitive objects* (objects of self-knowledge), incidentally. We can confidently say that intuitive objects exist, as any attempted discourse to deny them meaningfully itself logically implies intentions (as to the meanings of the words used) and therefore (some) intuitive objects. Thus, the postulate that there are intuitive objects is not an arbitrary claim, but a hypothesis for which we have found empirical (concrete) confirmation in the fact of language and its rational (abstract) implications.

Putting our ideas (terms, propositions, arguments) into words is called **verbalization**. Regarding the meaningfulness of words, what misleads many skeptical philosophers is the observation that words often have uncertain, vague and variable meanings. Starting from the assumption that words have to have real, precise and unchanging meanings to be at all meaningful, they conclude that words are otherwise meaningless. But this is a mistaken view, based on the misapprehension of word-meaning as equivalent to *definition* (by means of other words, as above described) and on a model of knowledge as a closed-circuit and static body of (verbal) information.

In truth, as careful observation of our actual behavior reveals, knowledge acquisition is gradual and adaptive. Our experience is cumulative and our rational reaction to it is a developing and evolving thing. There is no single item or total body of knowledge that stands alone and final; and the interrelationships between items, including the rules of interrelation, are always subject to review and revision. Knowledge is inevitably *contextual*, implying an unending trial and error process. It is not (verbal) definition that gives meaning to words; definition is only *an attempt to put into words* and delineate what we *already* wordlessly intend. A definition is like any other proposition subject to empirical, intuitive and rational checks and balances. It is an inductive product, not a deductive preliminary.

When we come across a new appearance (be it phenomenal, intuitive or abstract), we may find fit to label 'it' for purposes of memory and further discourse. What we mean by 'it' (a physically, mentally, intuitively or verbally indicated, i.e. *pointed-to*, object, a 'this') is always tentative and open-ended. As we proceed further, thanks to new experiences and reasoning, this intended meaning may become firmer or shift or even entirely dissolve. First, 'it' may seem clearly understood; then we come across new phenomena or have new thoughts which make us realize that the initial intention is uncertain or unclear and we have to adjust our focus, and make further differentiations so as to pin-point more precisely what we 'really' intended by it; and so on, successively. Sometimes the intention remains unchanged, but our initial verbal definition (if any) may turn out to be inaccurate (too broad or narrow or otherwise inappropriate) and require modification. In some cases, we come to the conclusion that there was no need for a new word, and either abandon it or accept it as a mere synonym. In some cases, we realize that the term was already assigned to some other object, and keep it mind that it is a homonym.

Words are primarily intended to express (assumed) facts, but they may also be used – inadvertently as well as consciously – to signify fictions. We are quite able to distinguish a sensory phenomenon from an imaginary one without demonstrated sensory equivalent, and register the names for each with appropriate caveats. The intended object of a word may at first be thought real (as all appearances tend to be), and then after further information and reflection (which sometimes stretches over centuries), be found illusory. In such cases, the word may be dropped altogether – or kept for historical or literary purposes *with the understanding that* what it refers to is fictional (e.g. 'unicorn'). These observations in no way justify a general condemnation of verbalization, but are events we take in stride without difficulty.

4. A Theory of Universals

'**Universals**' (a venerable philosophical term) is another word for abstracts, referring firstly to the presumed something underlying identifications of distinct sameness (e.g. the squareness of two square objects[16]), and at a later stage to whatever may lie behind more complex products of conception (involving imagination as well as logic); that is, all the end-results of interpretation, of reasoning about the perceived outer and inner world[17]. Furthermore, we assume that there are also objects of intuition (i.e. self-knowledge)[18], and these may also be compared and reasoned-about, and give rise to concepts.

> We can safely assume that, in some cases at least, universals/abstracts/concepts have an ontological significance, and are not merely mental constructs *referring to nothing beyond themselves*. For to deny *all* concepts such reality, is to deny truth and meaning to *one's own* assertion too, since that skeptical assertion itself is wholly composed of concepts. It follows that at least *some* concepts must be admitted as having a presence independent of any thought about them. (Precisely *which* concepts are to be admitted is what the science of Logic is all about.)

As to the nature of universals, my own theory (derived largely from modern physics and Buddhist ideas) would be that universals are, effectively, mathematical formulas. If I compare two waves, all the measurements I perform in doing so can be expressed by means of the algebra of coordinate geometry[19]. Such formulas, or rather ***the relative measures of the waves' features, motions and relations*** signified/implied by the formulas, are what we call 'universals.'

> If the waves making up two particulars are wholly or partly equal or proportional, in respect of their varying shapes and sizes (length, amplitude), positions, trajectories (directions), speed, frequencies of conjunction or non-conjunction with others, then the particulars seem are 'similar' to us, and their common measures can be used to define concepts. Thus, universals (portions of waves, or of their histories) can be found in two or more particulars (full waves); and further abstracts can in turn be based on such abstracts (in the way of portions of portions of waves).

The magnitudes or degrees of the features, movements and interactions of waves (universals) are not the waves themselves (particulars), yet *the waves cannot exist without having measures*. We perceive the waves and we conceive the formulas[20], but both are in a sense equally there, apparent in the phenomenal object of experience.

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16 Comparison involves two objects, as already stated. This does not mean that comparison is impossible with only one extended object under scrutiny, for we may be able to compare *parts* of that object together. We may, for instance, compare the sides and corners of a single square: the resulting concept is not the square figure as such, but concerns more specifically lines and angles. Even then, the concept is incomplete till we contrast other lines and angles.

17 I here count identification of sameness and difference in concretes, and of their conformity with the 'laws of thought', as among acts of reason (the first and simplest of them) in that they result in conceptual information. They are however so basic and relatively brief and devoid of process (direct) that they seem akin to perceptions. We could also, and often do, regard them as a distinct class of objects – objects of conceptual *insight*, as against 'conceptualization'.

18 I have note well excluded from this class, of objects of intuition, claims to direct knowledge of objects beyond oneself, e.g. claims to sensing ghosts or reading other people's thoughts. These claims must be regarded, *ab initio* at least, as pretentious. While it might eventually be demonstrated by experiment that some people do have such extrasensory cognitive powers in some circumstances (e.g. by finding what they predict as thought by others as reported always or usually true by the latter, although no physical means of communication between the two were possible), the need for careful demonstration remains in every case an epistemological necessity. We cannot naïvely accept such claims as valid without resulting chaos in knowledge; they must be viewed as *hypotheses to be confirmed by adductive means*. Most people who claim direct knowledge of spiritual, intuitive, mental or material events outside themselves are simply not aware of the inductive processes involved in thinking, and tend to take their first impressions for granted without verification procedures.

19 Here we of course have to go into detail regarding wave forms and mechanics.

20 I do not mean to say that every time we think a universal we construct a precise mathematical formula. Ordinarily, people rarely if ever revert to advanced mathematics! I merely imply that we tend to such a formula, in a vague and approximate way – i.e. that if the mass of mental measurements and comparisons in our minds were correctly summarized, they would amount to a certain formula. Ex post facto extrapolation from fragmentary observations and notes is thus involved, in speaking of a formula.

For this reason, even abstracts are sometimes regarded as quasi– or virtually experienced (thus broadening the term 'experience' to cover all appearances).

The waves and their measures *cannot be dissociated* within the field of experience, being respectively entities and attributes or behaviors of entities. What reason does to 'draw out' (abstract) the measures, is to focus on them while mentally ignoring the waves (or any images of or symbols for the waves). One cannot normally directly know the measure of a *single* object; one can only do so by considering and comparing a *plurality* of (two or more) objects. Even when the intuited self conceives of 'a self,' although it has no direct experience of other selves, it refers to the many times it has intuited itself.

> Thus, a universal can be said to transcend experience, yet be somewhat in it or immanent – it straddles experience. A universal is not in some metaphysical Platonic repository of Ideas, nor merely in the mind of its beholders (though it may also be there, when some external wave induces a like internal wave in a mind); it is inherent in every complex of wave-forms with the selected common mathematical characteristics.

This explanation is not intended as a mere metaphor– it need not be limited to imagined waves, but can be extended to all concrete existents. If light and gravity are waves, elementary particles are complicated bundles of such waves, sound is a wave (movements of air masses), and if the other sense-modalities are ultimately wave-like (as the electrochemical events associated to sensation suggest), then all material and mental phenomena, including living beings, may be said to be waves.

These waves all occur and travel and interact within a space and time as voluminous as the universe, conceivably as moving deformations of some primordial fabric (the stuff of 'existence')[21]. They vary in complexity, ranging from brief and short events (unit waves, say) to the 3-D pulsations of quarks, photons, neutrinos, electrons or atoms, molecules, and to larger and larger collective wave motions of the later. Not just sights and sounds, but all sense-modalities, material or mental, including whole living organisms, are in this view varieties of wave or wave-motion formations.

And perhaps not only objective phenomena, but also subjective (i.e. intuited in/by the Subject) things and events might be supposed to have this fundamental wave character.

Wherever waves (particulars) appear, their measures (abstracts) are inherent in them. So we can say that, although universals are not normally additional *extensions* in the experiential field (i.e. not themselves discernible wave events), they are still somehow present in it. They are normally only known through interpretative efforts (comparing and contrasting two or more waves). This theory of universals as mere measures of things assumes all things are reducible to wave activity (in some primordial substratum, perhaps – yet not an ether, somehow[22]).

In that case, the complex waves we call the **sensations** can well be construed as wave signals transmitted from one end of the sense organs via the spine and/or brain[23] over to their other end where the observer observes them. Similarly, **memories** may be supposed to be wave signals stored and sustained within the brain for occasional recall. That is, the senses transmit energy or fields onward to the Subject, from the 'outer' region of his experience, comprising his apparent body and its material surrounds. Memory may thereafter be produced, reverberating with the same vibration.

With this thesis, we are not forced to assume that the waves are distorted in transmission or storage, since our premise is that the terminal wave is a continuation of the initial wave. In such case, the message received (by the observer) does not just *resemble* the original message (captured by the sense organ's receptors or stored in memory); it *is* the original message, which has vibrated through the senses, and possibly memory, to us without refraction. Assuming uniformity, the beginning and end waves are just the same object at a different time – a single traveling (wave) object. They may be of different *substance* (material, in whatever way, or even a mental

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21 Looking at a large body of water such as a lake, you can get a visual image or analogy of what a universe of waves would be. You see bubbles, ripples and waves in constant flux, appearing, moving around, disappearing; these seem individual, in that the sunlight allows us to mentally draw boundaries for them, but they are all just the movements of one big entity; stir one place in the lake, and the motion is carried over to many or eventually (in diminishing degrees) all others.

22 In view of the Michelson-Morley experiment and its sequel, the Relativity theory (see further on).

23 Which was labeled 'common sense' by Aristotle, as I recall. Meaning, central sense.

product of material waves) and even magnitude (though with due proportions), but their *form* must remain the same. The universal is that form – the mathematical characteristics (including motions and interactions, as well as features) of the wave.

> Thus, when I see or remember a bird, say, I can rightly consider that I am in *direct* contact with the bird; I am experiencing the waves emitted by the bird that reach over (via the senses, or memory) all the way to me the observer. The waves *are* the bird, the part of it that flows over into my body. This is not a mystical statement, but one quite physical. Any delimitation of the bird (or any object) in space and time elsewhere than at the very limits of its range of physical effects is arbitrary.[24]

In this view, then, the sense organs (themselves wave complexes, like all matter) are filters for particular classes of waves (fine light waves, gross sound waves, atomic wave bundles, electrochemical bundles of waves, whatever). Each sense organ is capable of receiving and passing on only specific wave-forms[25], leaving out all others; each specializes in a sense-modality (or group of sense-modalities), insensitive to others. The eyes exclude sound waves, the ears ignore light-waves, etc.[26] These waves would be the same in form if they had been encountered immediately and not vibrated though the senses; the senses only isolate them from their context. Therefore, we may indeed not see all the waves out there[27], but those we do see we generally accept as equivalent, as mere continuations of the original disturbance in space and time.[28]

> We should also in this context account for another kind of filtering, that of perceptible objects we do not care or take care to perceive. Thus, for example, I ordinarily do not pay attention to the glasses I am wearing or to the chair I am sitting on, and a mass of other sensations. I do not think such uninteresting items are ignored by the sense organs, because then we would not have the choice of perceiving them on occasion. Rather, I think we perceive them faintly, but discard the message, or allow it to enter memory subliminally, without giving it full conscious attention.

Similar comments can be made with regard to memory, note well. Once the sense-object has been perceived by the Subject, after relaying the waves concerned by sensory processes, the wave is stored (electrochemically, as neuroscientists teach us) in the brain. That is, we can well suppose, the wave *itself* is artificially made to *continue existing* in the way of some activity in the brain. Thus, in this view, the neurological 'imprint' is not a mere coded

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24 A bird, of course, is a complex entity, involving not only light waves from its plumage, but other sense data, like its physiology, its movements and behavior patterns, its call, its smell, even its taste. It is through consideration of *all* information about a given bird, in the same and other sense-modalities, and its comparison to other birds and things, that we decide whether, say, a visual message (apparent bird-form) falls in the category of 'real' bird, or is merely a photograph or statue of a bird. Errors do occur, not because the visual message is ever wrong, but due to not taking into consideration all information currently available (or later available).

25 Although I say wave-form, I do not mean that sense-perception is perception of 'universals'. The wave the observer sees (via the sense organ concerned) is still concrete; it is not merely the *measurement* of the original wave (a 'universal' or formula or abstract) that is passed on, but the wave itself or a continuing echo of it (a concrete manifestation). I only mean to remind that the wave *has* a form, indeed a constant one.

26 This idea suggests that memory too is specific to the different sense-modalities; but it might also involve many sense modalities at once. As imagination is based on memory, it would be economical to store memories of complex sensory events in the various sense-modalities, so that they can be accessed separately in new combinations.

27 I cannot at this stage say just why filtering is necessary, however. A plausible explanation would be that a direct universal consciousness would be overwhelming somehow, driving the observer crazy by the multiplicity of messages. For evidently, digesting data *takes time*, we have to ponder the interrelationships between the items of our experience, and indeed think about the validity of our thinking processes. We all know from bitter experience that if too much information and thought is required at any moment, we become confused. The sense-filters therefore probably help us to sort and order incoming data for analysis and synthesis. Yet immediate universal consciousness is precisely what Enlightenment-seekers work for and claim possible. According to them, reliance on sense-perceptions is an aberration to be avoided, sense-data being but a veil over reality!

28 Such filtering may be considered not to occur in self-knowledge – there being no distance to travel between the observer and himself, or disturbances within himself (viewing here attitudes and volitions as waves or wave motions, perhaps within some distinct, 'spiritual' substance of the observer's soul), no senses are needed and the observer knows himself most directly.

symbol of the original message, it *is* the original mathematical message. In such case, even while admitting that the message may occasionally be dampened, hard to recall or even lost, there is no need to figure out how come it (usually) stays the same. When we evoke a memory, or recognize a repetition of a sense-object previously encountered, we merely use the *ongoing* physical wave deep in the brain to produce a perceptible mental wave, identical in form to the stored one and to its sensory origin, projecting it (as an more or less vivid image) apparently inside our mind (for reminiscence) or outside it (for comparison to the new sense-object).[29]

What is true of memory of sensations is equally applicable to memory of abstracts based on such sensations, since as above postulated such abstracts are merely mathematical aspects of the wave-forms of the original sensations. Thus, we can understand without difficulty how abstracts are concretely stored in memory. As for mental projections (imaginations, perhaps feelings) and objects of intuition, and abstracts derived from them, supposedly they have allied physical vibrations in the brain (i.e. each of those thoughts has a specific physical effect, which therefore 'corresponds' to it), which may be stored in memory and recalled.

Some philosophers would object that the waves sensed or remembered may well, for all we know, change form as they tumble through the sense-channels, or within their memory storage. But in such case, we still have to appeal to the senses and memory to invalidate particular sensory or memory experiences – otherwise, how do we claim to know that error occurred? So we can only logically suppose occasional distortion.

> They could instead argue that the waves we experience are not as they seem end products of sensory processes, but independent events merely contiguous with them. But in such case, the impressions that we have a body, with a brain, spine and sense organs boiling with activity, would remain unexplained phenomena, leaving a gap or loose end in our understanding of the world experienced. To integrate all phenomena into our world-view, we need to include consideration of the phenomena we call the sense organs, etc., and suggest why they are there, what their role might be in the wider context of experience.

Thus, extreme skepticism is self-defeating, whether by inconsistency or by incompleteness. At first sight, the sensory and memory processes might be supposed refractive, producing an image very different from its origin[30]. We however cannot logically claim that this is definitely true, because such statement would require cognition of sense-objects without reliance on the senses, or of memory-objects without reliance on memory. The critic would be claiming special cognitive privileges not granted to the rest of us.

Our present account approaches the issues from another angle – phenomenologically. Start with the phenomenon *as a whole* as given; the only issue at stake is then: what is the possible relation between these two aspects of it (the objects classed as external and those classed as mental-images produced by the senses or the brain)? In that case, we may assume that the senses and memory relay the information and do so without affecting it, with much less pretensions. For we only claim to *relate together* two factors (the material object allegedly sensed or remembered, and the subsequent sensory or memory processes presenting a mental image at the interface with the observer) which are *already* in the field of consciousness and accepted as existing (whereas the opposite view lays claim to things *outside* its own awareness by its own admission).

We are only attempting to explain the existing situation, that a process takes place through the senses during perception of physical matter or in the brain during its recognition – what is the role of these evident processes, we ask? If we assume there is *always* refraction, we are making a statement denying our experience of the matter at hand. But we may well, i.e. consistently, assume that *not all* sense or memory information is faithfully transmitted, so long as we can determine the matter by *some* other, more reliable sense-data (and, often, of memory-data). We thus prove that (some) sense and memory data is trustworthy.

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29 The best metaphor for memory, in my view, is that of an *echo chamber*. I imagine a sight or sound (or whatever) channeled into a brain cell and there allowed to rotate on and on (storage function), until we decide to peek into the cell and see or hear the vibration once more (recall function).

30 Note in passing that this skeptical thesis at least implicitly admits that internal objects (images) are correctly perceived by the Subject (within his mind), even if it claims them to be incorrect renditions of external objects by the sensory and brain organs. It has to do so, to have anything to discuss at all! Cognition as such is not in question, but only the assumed equation between different classes of objects.

We may wish to confirm sense evidence scientifically, by means of experiments showing that the information indeed stays the same from reception by the senses to presentation to the observer, in the way of a physically discernible persistent vibration, whatever its comparative size, depth or substance. Similarly, we could look for an ongoing physical vibration of some sort in the brain, before definitively concluding that memory is stocked as specific wave-forms. But the issue is really not empirical – it is logical (which means in practice that even if we don't immediately find something, we have to keep looking).

Say we find no evidence of persistent wave-forms; we would alternatively look for fixed formulas that 'translate' the original wave in some regular manner, so that even if the final wave does not resemble it they can be correlated. Claiming codification of sense or memory data is not the same as claiming lawless refraction; for uniform refractive processes would simply require that we 'correct' our world-view by 'translation', whereas random refraction (such that no correspondences whatever can be established) would leave us in confusion. But in the last analysis, even assumption of a regular code is not a viable theory, because it too ultimately makes contradictory claims, that matter is perceived and yet – because of sense or brain interference – is not perceived correctly (which means, not perceived period).

So we must conclude, whatever experiment reveals, that 'some sense and memory experience is valid' is a logical truth. That is, no experiment being possible without this truth, none can belie it!

> We do not need an epistemological 'axiom' to defend sensation and memory as universally reliable. It suffices to consider the products of these faculties as *true until and unless found false*. That is, the assumption of their essential correctness is an *inductive* principle, rather that a deductive credo. No artificial forcing of the issue is involved. Every event of sensation or memory is granted initial credibility, while remaining open to eventual sensations or memories that may put the preceding in doubt. When and if particular contradictions occur, they must be sorted out in accordance with normal logic.

It should be noted that the wave theory of universals proposed is the only coherent theory available. If we consider other proposals in the history of philosophy, we find them all to be logically flawed, and so in fact incapable of dealing adequately with the problem of universals. Thus, Plato's Idealism, according to which the explanation of the common characters of different things experienced in our world are that they reflect certain transcendental "Ideas," gives a wrong impression of solving the problem while in fact only sweeping it under the carpet. The Ideas existing in a higher world are only *less numerous* than the things in our lower world, but they are still a plurality with some common characters. In that case, what of *their* common characters, such as "transcendentalism," "ideality," or existence – are they in turn representatives of a single, unitary, top world? And how would this One Grand Idea break down into the Lesser Ideas?

A more immanent view of universals, which could be regarded as effectively the current "common-sense" view, would be that different primary *substances* are scattered throughout the universe and combine in different ways to produce the things we perceive through the senses. Alternative theories can be proposed as to what to regard as these material substances: they might be distinct *sensa* (i.e. units of sensed light, sound, etc.), or perhaps *qualities* (the minimum number required to construct things) rationally inferred from sense data. Some suggest instead that universals may be *mental* or *verbal* constructs – i.e. imaginations or subjective inventions or mere words in our heads. Whatever we construe them to be, the (material or mental) theories of universals as substances suffer from the same flaw as Plato's theory: we are still left with the need to explain a plurality (albeit a smaller one), and derive it from a unity (existence).

5. Unity In Plurality

The above 'wave' theory of universals, *granting* its premise that everything is ultimately reducible to 'waves,' i.e. mobile vibrations in some sort of continuum, leads to the very radical conclusion that 'all things are one.'

The world as it appears to our touch-organs or to the naked eye – or even the eye aided by microscope or telescope – may give the impression that dimensionless points, lines or surfaces exist in nature, but as Physics has evolved it has become clearer that ***physical objects do not have precise corners, sides or facades – but fuzzy limits, arbitrarily defined*** by the visibility to our senses (specifically, sight and touch), aided or unaided, of concentrations of matter or energy.

> For example, the tip of my penknife may seem like a sharp "point" to my touch or sight, but it is really – according to physical science (i.e. upon further investigation and reflection) – a rough, voluminous conglomerate of atoms, which are themselves complexes of smaller and smaller particles (electrons, protons and neutrons, seemingly some distance 'apart' from each other, etc.), which are themselves without beginning or end being really vague clusters of waves. Similarly with regard to the cutting edge or flat sides of my penknife.

Indeed, if one takes these considerations to their extreme conclusion, one could say that ***no object has a beginning or end, every object stretches to the ends of the universe or to infinity***, and what we refer to as a specific individual object is merely the most humanly visible or concentrated part of that whole, which we arbitrarily or conventionally consider a separable unit (and habitually name, to solidify our viewpoint). So that ***ultimately, there are in fact no individual objects, but only ripples in the single object that is the universe as a whole***.

Where does an atom (or any other body) begin or end, granting that all consists of waves? If we see a star billions of miles away, on what basis do we say that the star ends over there, while the "light from the star" is here? Rather, we ought to say that the light we see is *part of* the star, i.e. that it extends all the way to us (at and through our visual sense organs, and on to our memory) and beyond. At what distance from the star do the gases or the light it emits cease to 'belong' to it, and are to be considered as 'separate' bodies? ***The cut-off point can only be arbitrary, i.e. mere convention.*** Gravity operates at astronomical distances. What objective ground do we have for distinguishing a field from its apparent origin? Furthermore, stars are in constant flux, arising in time and disappearing in time. At what point in time (as well as space) may we claim that the matter and energy we now call a star is 'not yet' or 'no longer' a star? Surely, the quarks from which the star emerged were already 'the star' and when the star bursts or is absorbed into a black hole it is still 'the star.' We ourselves are stardust – does that mean that the stars in question *became* us, or that *being* a star – from the beginning of time to its end – includes eventual human forms?

In this view, ***every entity in the universe stretches out with every other to fill the whole space and time of the universe***! And if we say this, we might as well say – without any mystical intent, though in agreement with Buddhist mystics – that all things are one. There are just *more intense concentrations* of matter or energy here and there, now and then, in *one continuous* field, but nowhere dividing lines. Because ***we perceive only fractions of the totality, only the aspects involving the sense-modalities***, we isolate small blobs of the whole as individual phenomena. All phenomena perceived are centers of complex wave activities in the universal fabric; *We* 'individuate' phenomena *with reference to the sense-modalities they exhibit which are accessible to our senses*. We regard as delimiting an individual object in space and time such perceivable *fraction* (visible to the senses) of the wave activity stretching to the ends of the universe – ignoring its larger invisible extensions, later induced by reason. Thus, ***all individuation is fantasy*** (this can be known by rational considerations, as here), ***reinforced by naming*** (itself a sense-modality phenomenon, by the way). In which case, strictly speaking, ***nothing is divisible at all***.

That would seem to be a correct view of our physical world in the context of present knowledge – the hypothesis most consistent with experience, experiment and current scientific theorizing. We thus, provided we anticipate the results of Physics and claim that some sort of unified field theory is sure to be established, and provided we stretch that assumption to include wave explanations of the mental and spiritual domains, arrive at a concept of the world as 'unity in plurality' – a harmonious marriage of the philosophies of Pluralism and Monism. Heraclitus was right – everything is ultimately motion (i.e. waves) and Parmenides was right too – everything is ultimately one thing (i.e. the medium subject to waves).

We could even view this conclusion as a justification of the Buddhist view that "all things are empty!" For instance, the message of *The Diamond Sutra* seems to be that all objects material or spiritual are *infinite* vortices with no beginning and no end. They are neither categorical as they seem; nor can they be surely declared hypothetical, being delimited merely by our naming of them, but having no sure limits in themselves so far as we know so that they are therefore effectively boundless.

We have already, inspired by Buddhist doctrine, concurred with them that individuation is a man-made artifice. But even granting that we might legitimately, out of mere convenience, focus on specific places and durations of the universe, because a disturbance 'stands-out' there and then in relation to our senses – we are still left with the

question as to *what* it is that is disturbed? What is *the medium* or substratum of all wave motions? We are tempted to view it as a stuff and call it "existence," or like Descartes call it "the ether." The problem is that since the Michelson-Morley experiment on the velocity of light such a substance underlying waves has apparently been discredited. These physicists measured the velocity of light in the same direction as our planet's motion and in the opposite direction. To everyone's surprise, they found the velocity identical either way. This was eventually explained by Albert Einstein as indicative that there is no absolutely stationary substratum or "ether" relative to which wave motions occur, and he built his famous theory of Relativity as an alternative world-view (such that space and time coordinates are depend on the velocity of the observer relative to what he measures).

Thus, although when we think of waves, and mathematically work out their motions and interactions, we regard them as disturbances within some medium, it turns out that there is no such medium according to experimental indices! On this basis, we can agree with Buddhist philosophers that (surprisingly, incomprehensibly) *nothing* is being waved – i.e. that the ultimate nature of "existence" is "emptiness." And there is no need of high meditation or mystical insight to arrive at this conclusion – it is seemingly justified by ordinary experience and reason (scientific experiment and theory).

5. The Self

1. The Self

According to our account, the 'self' is first noticed experientially, through a faculty of intuition. This same assumed faculty (of the self) is able to experience the self's cognitions, volitions and affections (i.e. its 'functions'), as well as the self itself. Neither the self nor its said immediate functions have any phenomenal characteristics, so they cannot be perceived. The fact that they cannot be perceived does not however imply that they do not exist; in their case, to repeat, another kind of experiential cognition is involved, that of 'intuition.' Cumulative experiences of self and its functions allow us to construct concepts of self, cognition, volition and valuation.

Additionally, we regard self and its functions as having mental and material *effects*. Imaginations and mental feelings, as well as bodily movements and sentiments, are considered (within our current world-view) as indirectly caused by the self, through its more immediate exercise of cognitive, volitional and emotional powers. What is caused by the self is not strictly speaking 'part of' the self, yet it still 'belongs to' the self in the sense of being its responsibility. This *extended* sense of self may be said to have phenomenal characteristics.

> Moreover, apparently, the moment we but experience anything phenomenal, or think in abstract terms, or make choices or take action or feel emotions of any sort, a person as the grammatical subject seems logically required. That is, an 'I' doing these things seems to us implied. Every object appearing give rise to a parallel awareness of a **Subject** to whom it appears and a relation of **consciousness** between it and the object. Similarly, every act of volition or valuation, however devoid of phenomenal characteristics, arouses in us the conviction that an Agent (or author or actor) is involved. This is called 'self-consciousness,' but it is somewhat inaccurate to do so, because what is involved here is not only intuition of self, and eventual perceptual experiences, but also a logical insight, something abstract and conceptual.

We conceive the self, in its strict sense, as composed of a uniform substance that we label 'spiritual' (to distinguish it from matter and mind). We also conceive it as an entity that we call 'soul,' which underlies all events and changes relative to the self (i.e. its functions), constituting an abiding and unifying continuity[1].

> Contrary to what some people presume and some philosophers (pro or con) suggest, to assume (whether intuitively or conceptually) a soul or spiritual entity underlying cognition, volition and valuation, does *not* logically necessitate that such entity be eternal. Constancy in the midst of variation does not imply that a soul has neither beginning nor end in time (or space). Just as a material or mental entity is conceived as something permanent relative to certain transient aspects of it, and yet as a whole transient relative to the universe, so in the case of a spiritual entity, it too may well have a limited world-line in space-time.

Intuition, perception and logical insight only necessitate the existence of one self – the Subject of these acts of consciousness. Solipsism remains conceivable. Our common belief that there are many souls like our own one in the world is a conceptual construct and hypothesis, which as such is perfectly legitimate and indeed helps to explain many experiences. Also not excluded is the belief that there is really only one big Soul (that perhaps pervades or transcends the universe of matter and mind), underlying the apparent small soul(s) – this is the belief

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1 The term 'self' might be defined (in a rather circular manner) as 'other than everything else that is an object of consciousness.' It of course refers to the same thing as 'soul.' The concept of soul refers to something very unitary, the ultimate Subject of cognition and Agent of valuation and volition. The concept of ego refers to a more superficial layer of the psyche, a complex of current and habitual attitudes and behaviors, bound together by certain 'ruts' of thinking. The former is relatively free and responsible; the latter functions under considerable compulsion. The ego is the passive expression of the soul's *history* of experiences, thoughts and choices, whereas the soul is the active maker of that history. (See next section.)

of monotheism. That is, belief in a soul does not prejudge the issue of *individuation*. Just as material entities may, upon reflection, be considered as all mere ripples in a universal fabric, so possibly in the case of spiritual entities. But such ripples might be permanent or transient. There is no logical necessity to assume that upon dying the soul lives on elsewhere (in a heaven or hell), or that it remains or is reborn on earth in some form, though such possibilities are not to be excluded offhand. The difficulty with any idea of transmigration is to experientially demonstrate some sort of transfer of spirit or energy (karmic reaction) from one incarnation to the next. To imagine some such transfer, to assert it to occur, is no proof. I cannot either think of any theory for which a 'law of conservation of spirit' might be a hypothetical necessity to explain certain empirical data.

Moreover, to posit the existence of a soul does not necessarily imply that this substance, anymore than the substance of imaginations, can exist outside and independently of the material substance. The spirit may be just an *epiphenomenon* of the peculiar cluster of matter which constitutes the biological entity of a living, animal, human body, coming into being when it is born (or a few months earlier) and ceasing to be when it dies.

> (Notwithstanding, we may just as well posit that matter and mind are more complex arrangements of spiritual stuff, as claim that spirit and mind are finer forms of matter; ultimately, the distinctions may be verbal rather than substantial.)

The question as to where in relation to the body the soul is located, whether somewhere in the region of the brain or throughout the body, remains moot. Also, the soul might be extended in the space of matter or a mere point in it. But such issues are for most purposes irrelevant.

Many philosophical questions arise around the concept of self, and it is legitimate to try to answer them if possible. But one should not forget the central issue: who or what if anything is the Subject of consciousness? This question arises as soon as we are conscious, and cannot be bypassed by any sleight of hand.

As already mentioned, some Buddhist philosophers deny existence to the Subject, self, soul or spirit. Insofar as their argument is based on the impossibility of pinpointing perceptible qualities of the soul, it carries some conviction. In the West, David Hume presented a similar argument. But their attempt to explain away the common impression that we have a soul by making a distinction between relative/illusory existence and independent/real existence is confused[2].

> Buddhist philosophers explain our belief that we have a self as an illusion to due the overlap of innumerable perceptual events (sensations and imaginations), called *dharmas*, which we mentally integrate together by projecting a self at their center. They have an ontological theory of '**co-dependence**' or 'interdependence,' according to which not only the self but all assumed essences are mere projections arising in our minds, due to things having no existence by themselves (solitary and independent) but existing only in (causal and other) relations to all other things[3].
>
> I want to here suggest in passing how the co-dependence theory itself may have erroneously arisen. Every theory has a kernel of truth, which gives it credence; the problem with some theories is that they have a husk of falsehood, which must be separated out. In the case of this theory, the error is a confusion between ontology and epistemology. I would agree that no item *of knowledge* is true independent of all others. Any appearance has by virtue of at all appearing (as an experience or as a claim in abstract discourse) a quantum of credibility. This basic minimum does not by itself definitively suffice to make that appearance 'true.' It merely grants the appearance consideration in the overall scheme of things. Only after each and every item has been confronted and weighed against all other items, may we terminally declare those that have passed all tests 'true.' Thus, the truth of anything is not only due to the initial drop of credibility in it, but to the final combined force of all drops of credibility in all available data.
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> Buddhist philosophers have, by imprecise thinking, turned this methodological fact into an idea that there is 'real' universal co-dependence. Moreover, their theory is that existents are apparent only because an

2 In *Buddhist Illogic*, I criticize this idea as based on dubious generalizations and infinities.

3 In my not yet published work *The Logic of Causation*, I show how if everything is causally related to everything else (in the same sense of causation), then nothing is causally related to anything! For causation can only be distinguished out from the mass of appearances if some things have this relation *while others do not*. The notion of 'everything causing everything' is self-contradictory.

> infinity of 'relations' crisscross. These relations are claimed 'empty' of terms, i.e. they are relations relating 'nothings' to each other. It is not said what sort of existents these relations themselves are, and why they are exempt of being in turn mere products of yet other relations ad infinitum. It is not said how an infinity of zeros can add up to a non-zero. By way of contrast, note that in my epistemological version each item of appearance has an initial drop of 'credibility,' and the final product has a truth value that can be equated to the sum of all such initial quanta. It is not an interdependence of zeros.

As for consciousness, Buddhists regard it as directly accessible to itself, in high meditation at least. This is what they seem to intend by expressions like 'no-mind,' or consciousness 'empty' of any content, without object other than itself. They thus seem to posit the possibility of an instance of the relation of consciousness turned on itself (as against the ordinary view of 'self-consciousness' – which is 'consciousness of consciousness of something other than consciousness'[4]). This could be interpreted as a tacit admission by them of the possibility of intuition. Observe also, they often use the terms Subject, consciousness and mind interchangeably, which gives rise to confusions and errors.

> It is worth noting in passing that terms like 'no-mind' or 'emptiness' are negative – and, as earlier pointed out, negation is a rational act. Nevertheless, it would be unfair to regard these concepts as based on ideational construction. Buddhists who use them claim them to refer to a positive experience. The negative names are only intended to stress that the content of such experience is incomparable to any other.

The phenomenological approach to the above issues is different. To begin with, it is sufficient to stress the *doctrinal* aspect of Subject and consciousness. Whether we grasp them intuitively, through perception or conceptually, what matters most is the role they play in our arrangement of knowledge, in our view of the world. If their assumption enables us to propose a *consistent and repeatedly confirmed explanation* of the appearance of phenomena, i.e. that they appear (somehow, we do not know just how) primarily through senses or using memory and imagination, to an entity with a mind and a body surrounded by a physical world, and so forth – then their worth and truth is inductively proved.

The concepts of Subject and consciousness are not loose, arbitrary inserts in the puzzle of knowledge, but interdependent items in a complex structure. They are part and parcel of the collection of concepts through which our experiences are made to seem intelligible; that is all. They need only be claimed to be hypotheses; we need not reject alternatives offhand, if any credible alternatives are proposed. Our security is based not on an anxious attachment to one more dogma, but on the track record of these concepts together with others like them in putting certain issues to rest.

The 'self' could be considered as phenomenal, *in the sense that* phenomena are perceived as modified (refracted or somewhat shifted) by some presumed presence, which is assumed to be the self of the perceiver. The self is thus phenomenal indirectly, by virtue of being *'inferable'* from phenomena. This is normal inductive procedure: some empirical event stands out and is explained by some hypothesis or other, which is found coherent and thereafter repeatedly confirmed (unless or until specifically refuted by logic or experience).

> To illustrate the thinking involved: If I look at the surface of a body of water and see that the general pattern of the waves is broken someplace, I mentally outline the area that seems affected (i.e. which has a different ripple pattern) and also propose some reason for the modification (e.g. rocks below the surface, a gust of wind, the passage of a boat, and so forth). Similarly, if I see a shadow, I assume something to be casting it (i.e. to be blocking the light); and according to the shape of the shadow, I estimate what that thing might be.

Buddhism seems to intend to interdict this thought process. It tells us not to infer anything behind the perceived 'modification' in the phenomenal field, but take it as is. For Buddhism, to speak of 'modification' is already an artificial isolation and thus a distortion of fact; it is a projection of 'form' onto content, implying extraneous activities of comparison and contrast. Moreover, to seek a 'cause' that explains the modification is merely to add another layer of projection to an already eclipsed empirical reality. This is true not only with regard to assuming

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4 That is, one instance of the cognitive relation has *another* instance of the relation as its term, which in turn has something *other than* an instance of the relation as its term.

things have underlying 'essences', but also regarding the assumption of a 'self' perceiving and inferring. Better, we are told, to look upon phenomenal events (the visible ripples or shadow, for instances) and see them as they are, rather than see them as indicative of other things and get lost looking for such phantasms.

This argument may seem to carry conviction, but it is not consistent. Being itself a conceptual discourse of the kind it criticizes, it throws doubt upon itself. We may well admit the interferences involved in conceptual thought (as in the functions of isolation, projection of outline, comparison and contrast, causal reasoning, hypothesizing), without thereby having to deny its validity when properly carried out. Indeed, this is the only consistent position.

Furthermore, my own position is that our own soul (or self) is not only inferred from the appearance of phenomena, but also directly 'intuited' – or at least inferred from intuitions. Certainly, the soul's non-phenomenal functions (consciousness, volitions, preferences) have to be directly intuited, as they cannot be fully explained with reference to mental and material phenomena. Possibly, the soul is in turn inferred from these intuitions; or equally possibly, it is itself directly intuited. To my knowledge, Buddhism does not take this phenomenological thesis into consideration, nor of course refute it.

2. Factors of the "Self"

With regard to the concept of self, we need to identify the various ways we develop belief in a self, i.e. the bases for such a concept in practice, i.e. ***what we rightly or wrongly identify ourselves with***. The following are some examples to be expanded upon:

a) We personally identify with ***sensations of and in the body***, including touch and other sensations that present us with its extension and delimit its boundaries in relation to a perceived more "outside" world, as well as visceral physical sensations and sentiments. Thus, we feel and see and hear and smell and taste our "own" body, or parts thereof, and identify with the sum of these perceptions. This is due largely to the enormous 'presence' of the body in our experience, its insistent and loud manifestation. It demands so much of our attention that we become focused on it almost exclusively.

   Consider how (most) people confuse themselves (to a large extent) with their sensual urges and emotions. If they feel hunger pangs, they rush for food. If they feel a sex urge, they either grab a mate or masturbate. If they feel like alcohol, tobacco or a drug, they readily indulge. In search of sensations they engage in endless chatter, or watch movies or listen to music. People commonly think that when they feel pride or self-pity, or love or hate for someone, they are in contact with their innermost being[5]. We confuse every urge or sentimentality with ourselves, and therefore uncritically think that satisfying it is imperative to do ourselves good.

b) We identify with our ***perceptions of the world beyond*** our "own" body, the "outside" world. Although these experiences are considered external to us and transient, they serve to define us personally in that they are a specific range of actualities within the larger field of possibilities. That is, we identify with our life story, our personal context and history, our particular environment and fate. We forget that we are fallible, and ignore the role chance plays in our lives.

   We learn a lot about ourselves, not only by introspection while alone, but also by observing one's behavior in relation to the external world, the challenges of nature and interactions with other people. We also learn about ourselves through observing other people's behavior, and recognizing our own similar patterns of behavior in them.

c) We identify with our memories and fantasies (including anticipations of the future, our ideals and plans, idle dreams, etc.) – our ***mental projections***. We see our identities in terms of our specific past experiences and adventures, and our present desires and expectations for the future. Obviously, this aspect is not merely perceptual, but implies a ***conceptual framework***, which generates certain thoughts and emotions. Even if

5 Of course, I do not mean that feelings are unrelated to the person experiencing them, but only that they may be more superficial than they seem, or have subconscious motives other than those pretended, and so forth. For example, apparent 'love' may turn out to be mere 'infatuation,' or be motivated by convention or duty, or even unadmitted hatred.

these are gradually changing, we identify with their evolution and direction of change, as well as with their constant elements[6].

d) We identify with our ***past and present beliefs and choices***. This aspect relates to Consciousness and the Will, which format our distinctiveness and identity, as well as our insights, thoughts, behavior, whims, values, pursuits and emotions. Implied here is what I have called the intuition of self – i.e. self-knowledge in a serious sense. We also identify with our *presumed future choices*, that is to say what we expect or intend or are resolved or plan to do.

e) Similarly, we identify with our verbal and pre-verbal ***discourse***. As evident in meditation, not all thoughts are in fact generated by ourselves. We are passive recipients to many or most of them. They just pop up in our minds as *non-stop* mental noise, repetitive nonsense, compulsive chatter. But most of us usually assume possession of such internal events, regard ourselves as their authors, and therefore define our selves in relation to them.

f) A very important self-identification is that with our ***mental image of oneself***, be it largely realistic or fanciful. This includes memories and fantasies – in all the sense-modalities – of our facial and bodily features and expressions, character traits, voice and handwriting, and other aspects of personality, as well as of our thoughts and actions. The memories and fantasies are based on reflections in mirrors and pictures and other visual and auditory recordings of oneself, as well as direct perceptions of parts of one's body and its movements and of one's inner world.

   This self-image is what we would most readily refer to if asked to point to one's self. The important thing to note about it is that it is a construct, a mental projection – it is not to be confused with the self that cognizes, wills or values. It is an effect, not a cause. It has no power of cognition, volition or emotion, but is only an image that may influence the real self.

   Egotism or self-love is having an exaggerated opinion of one's own worth (beauty, intelligence, etc.). One of the main attributes or behavior-patterns of the "ego" (in the colloquial pejorative sense) is its stupid conceit.[7]

g) In formulating our personal identity, we are also influenced positively or negatively by ***how other people see us or imagine us***. Their perceptions or conceptions about us may, of course, be true or false. We must also be aware of the distinction between: how we *know* them to see us or imagine us – and how we *imagine* that they do.

   These issues are further complicated by the fact of ***social projection***: we often try to project images socially, through our discourse and behavior, in attempts to influence our own and other people's judgments about us. Thus, we may deliberately subconsciously edit our self-image for ourselves – modifying, withholding or adding information – till we lose track of realities concerning ourselves. And even when we do it just to confuse or mislead other people (in order to gain material or social benefits from them), we may end up ourselves losing track.

   This factor plays an important part in social bonding and regulation, but it can also become tyrannical. So many people pass all their lives trying to influence other people into seeing them in a certain way, so as to gain their love, respect or admiration. And if they cannot in fact fit in to assumed social demands, they will pretend to fit in.[8]

h) As the Buddhists rightly point out, our ego also defines itself with reference to its alleged ***external "possessions"***. "Who am I? – I am the one who owns this and that… I am the husband of this woman, the

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6 This is stated to oppose the Buddhist idea that inconstancy implies that there is nothing to identify with. One may indeed identify with a changing set of things.

7 Paradoxically, narcissists, vain persons who are wont to look excessively in mirrors, or seek to be photographed or filmed, are psychologically deeply insecure about their existence and identity. Big egos are really inflated balloons, fragile to a mere pinprick.

8 This was identified by Ayn Rand and Nathaniel Branden as a widespread affliction. They called such people, whose thoughts, values and actions are neurotically dependent on other's, "second-handers." Conformism or eccentricity, fear of loss of face and pursuit of prestige, are some of the expressions of this problem.

father of these children, the descendant of these ancestors, the owner of this house and these riches, the leader of a corporation, the recipient of a literary prize, the winner of a competition, etc." Note well, included here are not only material possessions, but also possession of people in whatever sense (sexual conquest, political domination, etc.) and abstract possessions (I wrote this essay, etc.).

To some extent, this identification of "me" with "mine" is an expression of the earlier listed more internal factors: "This is my shadow, *because* I have this body," "I own these things or people, *because* I have certain character traits and made certain choices, thus developing a certain history," we tell ourselves. But additionally, as Buddhists stress, it serves as territorial expansion for the ego, solidifying its existence, further anchoring it to the world.

Egoism or selfishness is looking after one's own (assumed) interests, exclusively or predominantly. One of the main attributes or behavior-patterns of the "ego" (in the colloquial pejorative sense) is its arrogant grabbing, irrespective of who is harmed thereby. 'Looking after Number One,' as the saying goes.

i) The fact that each of us may be referred to by a proper ***name*** (or pronouns that temporarily replace it) also, as Buddhism stresses, serves to impose and solidify in our minds the idea that we have a distinct self. Things referred to only by means of a common name (e.g. "a man") have less identity for us.

   We can include here all the *conventional aspects* of our identity: our ID card, for instance. This relates to considerations of *group membership*: membership in a family (family name, birth certificate), a nation (naturalization certificate, passport), a social class (rich or poor, commoner or ruler, different educational levels and professions), a religious denomination, an organization or a club. All these factors add to our "identity" largely[9] by mutual agreement, as does a name.

j) The ***theoretical concept*** of self or soul is also projected onto one's self – "I am this abstract entity". Whether this concept is true or false is irrelevant here; what matters is that there is such a theoretical projection for most educated people, i.e. we do identify with the self conceived by religions, philosophies and psychologies.

   For religion, the focus is on the enduring substance of the self (soul, spirituality) and on its moral responsibility and perfectibility (freedom of the will). The main feature of the philosophical self is that it is *reflexive*: it points back to the person who is conscious and willful, it is both Subject and Object, both Agent and Patient. Psychology is more focused on the existential intricacies of the self, some of which are indicated herein.

As colloquial use of these terms makes clear, the concept of ego is not identical with that of self. The ego is a creature of the self. When we feel insecure, we may seek to reassure ourselves by engaging in 'ego-trips.' This refers to comparative and competitive tendencies, such as domination, pursuit of admiration, or acquisitiveness. Power, fame and/or fortune gives us the impression of having an advantage over other people, and thus of being better able than them to cope with life. What we call our ego, then, is the petty side or product of ourselves. By giving this a name, we can distance ourselves from it, and discuss it and hopefully cure it. This field of psychology of course deserves (and gets) much study and elaboration.

3. Identification-With

The recurring term in the above treatment is "identify with" – just what does it mean and indicate? It refers to some sort of epistemic and psychological mechanism, through which each of us assumes for a while himself or herself to have a certain identity described in imagination and verbally.

With regard to the mechanism through which we identify with each of these aspects of selfhood, consider how after meeting an impressive person, or reading a book on ethics or a novel, or hearing a song or seeing a movie, one may be susceptible to identifying for a while with the person or personality-type or protagonist encountered. One may go so far as to virtually become one with this role model for a while – not by conscious artifice, role-play or imitation, but by a sort of "*personality induction*".

9 Factual, as well as merely conventional aspects, may also of course be involved. Thus, family, nation or religion is usually based on one's natural parents; educational level or profession, on actual studies and practice; and so forth.

One's thoughts, attitudes and actions echo the model's, and one may even experience that one's body feels like his[10]. The way the latter experience occurs is that one interprets one's body sensations through the memory image one has of the model. More precisely, the touch sensations coming from one's face or the rest of one's body are mentally *unified* by means of that image (instead of one's own). This integrative mechanism relates to the 'correlation of modalities,' and involves a visual projection (either internal or hallucinatory).

I[11] posit two senses of "self" – (a) the **real self**, a natural entity with some continuity while existing, perhaps a spiritual epiphenomenon emerging within living matter of some complexity, which self is the Subject of consciousness and Agent of Will; and (b) the imagined self or **ego**, a constructed presumed description of the self, which has no consciousness or will, but is itself a product of them. The former is our factual identity, the latter is what we delusively identify with, by confusing it with knowledge of our identity.

Initially, the ego is constructed as a legitimate attempt to summarize information directly or indirectly produced by the real self. But the project gets out of hand, in view of its extreme complexity and the superhuman demands of objectivity and honesty involved. So in contrast to our identity – or more precisely, knowledge of our identity – we find ourselves facing a partly or largely fanciful construct, which does not entirely correspond to the original. This falsely projected identity influences the real self negatively, causing it to lose touch with itself. The ego thus involves *some* self-awareness, plus a lot of bull. It is a half-truth, which interferes with proper cognition, volition and valuation, and so presents us with epistemological, psychological, behavioral, emotional and social problems to be solved. The best solution is regular meditation, which allows us to gradually sort out the grain from the chaff, and return to a healthy and realistic self-knowledge.

Thus, we have two concepts of self, logically distinguished as follows.

a) One concept is *ideal*, in that its object or content is the real self, the self as it really is however that be. This is a hypothetical, philosophical concept, because it points to something that we know somewhat but not really in detail; we need it to be able to say something about the assumed real self, so we have this separate, minimalist concept, which is by definition true, i.e. the receptacle of whatever happens to be true.
b) The other concept is the *practical* one, wherein we readily build up our knowledge and imagination concerning the self. This one is by definition flawed, because all knowledge is somewhat flawed since we are fallible, and all the more so knowledge of the self, because of the subjectivities and psychological and social pressures involved in its formulation. The object or content of this concept is partly the real self (basic knowledge) and largely the imagined self (some true propositions, some false). For this reason, we distinctively name the referent "ego," to stress that for most of us the concept is bound to be considerably untrue.

Thus, it is correct to say, as the Buddhists do, that the self, in the sense of ego, does not exist. For it is the object or content of a concept known to be partly untrue for most people (all except the "Enlightened", if they exist). In a strict sense, then, there is no ego, the concept is empty, has no real referent[12] – what it intends in practice does not in fact exist, but involves projections of the imagination and verbal constructions. Nevertheless, the self, in the minimalist sense, exists. The concept of it collects only our true and sure knowledge about the self, to the exclusion of any fanciful details.

The reader may have remarked that even while valiantly fighting the Buddhist doctrine of "no-self," I remain intrigued and attracted by it[13]. Especially since that philosophy seems to claim that it is *only* by throwing off the

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10 I personally immediately block such fantasies when I become aware of them, though in my youth I would on occasion indulge in them. Many people are evidently unable, or more precisely unwilling or untrained, to control such personality induction, and end up floating hither and thither in borrowed identities.

11 Following Western tradition rather than the more radical Buddhist thesis, for now at least.

12 Just as, say, the concept of a "unicorn" has no real referent (though horses and horns are real enough, separately).

13 For me the idea that there is no self has the same fascination as the conclusion of Einstein's Relativity theory that there is no 'ether.' This concept of a substance in empty space, or of existence as such, was (I believe) originally suggested by Descartes. I personally find it difficult to grasp how the waves of field theory can be waves of nothing. Yet I am well aware that Einstein's conclusion is unavoidable, given the constancy of the speed of light whatever the observer's direction of motion. Conversely, if a no-ether is conceivable, why not a no-self?

idea that we have a self that we can achieve enlightenment and liberation. I do not want to make the proverbial mistake of throwing out the baby with the bath water. One possible interpretation of this doctrine, that would explain it while retaining the concept of soul (which to me still seems unavoidable), would be that it is intended to counteract our above described tendency to identify with some of the factors of self.

When we identify with some theoretical or fantastic idea of the self, we are *merely projecting a phenomenal self and saying "that's me!"* A projected image is confused with the one projecting it. This is very different from *being aware of one's real self through direct intuition* of it. Thus, we are effectively told, "if you want to find yourself, don't look for yourself in different concepts or images, but simply look into your soul. Rather than *thinking* of yourself or worse still thinking up a self for yourself, just *be* yourself and you will thus naturally get to know yourself." Perhaps it is that simple.

The self-ego distinction can be illustrated with reference to **Figure 2**.

The innermost concentric circle (called soul, and including the functions of cognition, volition and valuation) symbolizes the self in the most accurate sense of the term. This is sometimes called the real or true self, or higher or deeper self, to variously signify its relative position.

The circles labeled mind and body (including their stated functions) together constitute the ego, or 'self' in an inaccurate sense of the term. This is sometimes called the illusory or false self, or lower or shallower self, to variously signify its relative position. (To be sure, more materialistic people identify especially with their body, whereas more mental people identify especially with their mind. But mind and body are inextricably intertwined, in their sensory, motor, emotional and intellectual functions.)

The important thing to realize is that soul (the self) is of a different substance (spirit) than mind or matter (the ego). The former is the core of one's existence; the latter are mere outer shells. When we identify with the ego instead of soul, we lose touch with our actual position as observer, doer and feeler.

4. Ideal and Practical Concepts

Now, the above insights concerning the concept of self can be generalized to all concepts. That is, the same logical analysis can be applied in relation to any predication. We have on the one hand an ideal concept of some established object, which by definition contains *only truths, known or yet unknown,* about the object. And on the other hand, we have the practical concept, which we know to be inductive, subject to change – development, correction and improvement – and therefore by definition *to some knowable but unknown extent untrue*. The ideal concept thus has a wholly real (though relatively bare) content, whereas the practical concept has a partly real and partly unreal (though much richer) content.

Strictly speaking, then, the practical concept intends a non-existent object, while the ideal concept allows us to intend the nevertheless existing object. We need both of them for our discourse; they are complementary. The ideal concept is one portion of the practical, which also includes more doubtful elements or aspects. Careful knowledge acquisition, which may be aided by meditation, consists in being at all times aware to the maximum extent of the epistemological status (true or false, or certain or uncertain to what degree) of each item of knowledge. That is, to know at any given time what part of each concept is the basic-ideal part and what remainder is the tentative-practical part. To remember at all times that knowledge is something always in flux, which it is our responsibility to evaluate repeatedly to remain in touch with reality.

Just as the Buddhists deny "selfhood" to people, they deny "essence" to all other things. For them, this is one and the same error; the former being just a special case of, or alternatively causing, the latter. Our explanation of their position would be that they are referring to what we have just called practical concepts: their contents are indeed unlikely to fully correspond to real essence or selfhood. As for ideal concepts, they are not "empty," since their intention is by definition whatever happens to be real, whether or not it is known. Even in Buddhism, concepts like those of "mind ground" or "nirvana" must be admitted to be exceptions to the rule of emptiness, since they are effectively treated as the ultimate essence of things and people.

Notwithstanding, with a view to keeping an open mind in relation to this interesting Buddhist doctrine, we should *at least experimentally* attempt to construct a meditation and discourse gradually free from projections of self and the subject-predicate relation (predication).

For instance, in meditation, instead of thinking "I must become aware of my breath", think "become aware of breath" (thus diverting attention away from self, though still with an injunction), then think "awareness of breath" (thus getting away from a sense of active willing, of intensifying awareness and directing it towards the breath), then think "breath" (thus removing the relation implied by "of"), then just *be* wordlessly aware of breath (a pure phenomenon).

Thus, without adhering to Nagarjuna's fallacious discourse[14], gradually pursue wordless awareness, dropping the "I" (Subject), then instead of propositions (which use subjects and predicates) use only lone terms (verbalized concepts), then focus on the content of such terms (the event intended, without the word), then abandon the injunction to "think" of it and just experience such content inactively. All this merely goes back down the chain of conceptualization, and it is of course easier to learn not to go up it in the first place (at least not during such meditation).

5. Fallacious Criticisms of Selfhood

Since writing *Buddhist Illogic*, I have been reviewing Buddhist arguments against selfhood more carefully, and I must say that – while they continue to inspire deeper awareness of philosophical issues in me – I increasingly find them unconvincing, especially with regard to logical standards.

Buddhists conceive of the self as a non-entity, an illusion produced by a set of surrounding circumstances ('causes and conditions'), like a hole in the middle of a framework (of matter or mind or whatever). But I have so far come across no convincing detailed formulation of this curious (but interesting) thesis, no clear statement that would explain how a vacuity can seemingly have consciousness, will and values. Until such a theory is presented, I continue to accept self as an entity (call it soul) of some substance (spirit, say). Such a self is apparently individual, but might well at a deeper level turn out to be universal. The individuation of soul might be an illusion due to narrow vision, just as the individuation of material bodies seems to be.

Criticisms of the idea of self are no substitute for a positive statement. It is admittedly hard to publicly (versus introspectively) and indubitably demonstrate the existence of a soul, with personal powers of cognition, volition and affection. But this theory remains the most credible, in that the abstract categories it uses (entity, substance, property, causality) are already familiar and functional in other contexts. In contrast, the impersonal thesis remains mysterious, however open-minded we try to be. It may be useful for meditation purposes, but as a philosophical proposition it seems wanting.

Generally speaking, I observe that those who attempt to rationalize the Buddhist no-self thesis indulge in too-vague formulations, unjustified generalizations and other *non sequiturs*. A case in point is the work *Lotus in a Stream* by Hsing Yun[15], which I have recently reread. The quotations given below as examples are from this work.

> *"Not only are all things impermanent, but they are also all devoid of self-nature. Having no self-nature means that all things depend on other things for their existence. Not one of them is independent and able to exist without other things" (pp. 86-87).*

Here, the imprecision of the term "existence" or "to exist" allows for misrepresentation. Western thought would readily admit that all (or perhaps most) things *come* to be and *continue* to be and *cease* to be and *continue* to not-be as a result of the arrival, presence, departure or absence of a variety of other things. But that is very different from saying that their *being* itself is dependent: for us, facts are facts, i.e. once a thing is a past or present fact, nothing can change that fact, it is not "dependent" on anything. Yet, I contend, Buddhists seem to be trying to deny this, and cause confusion by blurring the distinction between change *over* different time and place, and change *within* identical time and place.

> *"The meaning of the word 'things' in these statements is all phenomena, both formed and formless, all events, all mental acts, all laws, and anything else you can think of."*

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14 See my work *Buddhist Illogic* with regard to Nagarjuna's arguments.

15 See in particular chapters 7-9. (The author is a Chinese Buddhist monk, b. 1928.)

Here, the suggestion is that impermanence concerns not only phenomena, which strictly speaking are material or mental objects of perception, but also abstract objects. The terms "formless" and "laws" and "anything you can think of" suggest this. But of course such a statement surreptitiously slips in something we would not readily grant, though we would easily admit that phenomena are impermanent. The whole point of a "law" is that it is a constant in the midst of change, something we conceive through our rational faculty as the common character of a multitude of changing phenomenal events. The principle of Impermanence is not supposed to apply to abstracts. Indeed, it is itself an abstract, considered not to be impermanent!

> *"To say that nothing has a self-nature is to say that nothing has any attribute that endures over long periods of time. There is no 'nature' that always stays the same in anything anywhere. If the 'nature' of a thing cannot possibly stay the same, then how can it really be a nature? Eventually everything changes and therefore nothing can be said to have a 'nature,' much less a self-nature."*

Here, the author obscures the issue of *how long* a period of time is – or can be – involved. Even admitting that phenomena cannot possibly endure forever, it does not follow that they do not endure at all. Who then is to say that an attribute cannot last as long as the thing it is an attribute of lasts? They are both phenomena, therefore they are both impermanent – but nothing precludes them from enduring for the same amount of time. The empirical truth is: some attributes come and/or go within the life of a phenomenal thing, and some are equally extended in time. Also, rates of change vary; they are not all the same. The author is evidently trying to impose a vision of things that will comfort his extreme thesis.

We can, incidentally, conceive of different sorts of continuity of conjunctions of phenomena (see **Figure 4**). An essential attribute of a thing would coexist fully, like an underlying *thread* of equal time length. A weaker scenario of continuity would be a *chaining* of different events, such that the first shares some time with the second, which shares some with the third, and so forth, without the first and third, second and fourth and so on having time in common. In some cases, continuity may be completely illusory, in that events *succeed* each other contiguously in time without sharing any time.

Hsing Yun goes on arguing:

> *"the body… is a delusion caused by a brief congregation of the physical and mental components of existence Just as a house is made of many parts that create an appearance, so the body… When those parts are separated, no self-nature will be found anywhere."*

That a house or human body is an aggregate of many separable elements, does not prove that when these elements are together (in a certain appropriate way, of course) they do not collectively produce something new. The whole may be more than its constituent parts, because the whole is not just the sum of the parts but an *effect* of theirs. The bricks of a house do not just add up to a house, but together become a house when placed side by side in certain ways; if placed apart (or together in the wrong way) they do not constitute a house (but at best a pile of bricks). Similarly for the atoms forming a molecule, the molecules forming a living cell, the cells causing a human organism. At each level, there is a *causal* interplay of parts, which produces something new that is more than the parts, something we call the whole, with its own distinct attributes and properties.

It is thus quite legitimate to suppose that when matter comes together in a certain way we call a live human body, it produces a new thing called the self or soul or spirit, which thing we regard as the essence of being human because we attribute to it the powers of consciousness and volition that we evidently display (and which the constituent matter in us does not, as far as we can see, separately display). That this idea of self is a hypothesis may be readily admitted; but to anyone conscious of the inductive basis of most human knowledge that does not constitute a criticism (all science develops through hypotheses). The important point to note is that Buddhist commentators like this one give arguments that do not succeed in proving what they purport to prove.

Here are some more examples, relating to the notion of "emptiness":

> *"Dependent origination means that everything is produced from conditions and that nothing has an independent existence of its own. Everything is connected to everything else and everything is conditioned by everything else. 'Emptiness' is the word used to describe the fact that nothing has an independent nature of its own" (p. 94).*

Here, the reader should notice the vagueness of terms like "connection" or "conditioning". They are here used without nuance, without remark that very many kinds and degrees of causal relation may be involved. The impression made on the reader is that everything is *equally bound* to everything else, however far or near in space

and time. But that is not merely untrue – it is conceptually untenable! Concepts of causality arise with reference to a specific relation, which some things have with each other *and some things lack with each other*. If all things had *the same* causal relation to *all* other things, no concept of a causal relation would arise nor be needed. We can *very loosely* say that the cause of a cause of a thing is "causally related" to it, but causal logic teaches us that the cause of a cause of a thing is not always itself "a cause" of it in the strict sense. And even if it is, it may not be so in the same degree. It follows that Hsing Yun is here again misleading us.

> *"Emptiness does not mean nothingness… all things have being because they all do exist interdependently" (p.97).*

Here, the image communicated to us is that each thing, although in itself empty of substance, acquires existence through its infinity of relations (dependencies) to all other things, each of which is itself empty of substance. We must ask, is this theoretical scenario credible? Does an infinity of zeros add up to a non-zero? What are those "relations" between "things"? Are they not also "things"? Are they not also empty, in which case what gives *them* existence? The concept of relation implies the pre-existence of things being related (terms); if all that exists are relations, is the concept still meaningful?

Furthermore, what does interdependence (a.k.a. co-dependence) mean, exactly? Is an embrace in mid-air between two or more people equivalent to a mutual support? If I cannot support myself, can I support you? The notion is unconscionable.

> *"Nothing is unchangeable or unchanging. All phenomena exist in succession. They are always changing, being born, and dying."*

Here, the author has simply dropped out the (previously acknowledged) and very relevant fact of *enduring*. To convince us that the world is nothing but flux, he mentions birth, change and death – but eclipses the fact of living, if only for a little while! The phrase "they are always" does not necessarily mean "each of them in every moment."

> *"A cause (seed) becomes an effect (fruit), which itself contains the cause (seed) for another effect, and so on. The entire phenomenal world works just like this" (p. 98).*

Here, we are hastily dragged into a doubtful generalization. The description of the cycle of life, with procreation from generation to generation, does not necessarily fit other causal successions. Causation in the world of inanimate matter obeys its own laws, like Newton's Laws of Motion for example. There is nothing truly equivalent to reproduction in it, to my memory. To convince us, the author would have to be much more precise in his analogies. Philosophers have no literary license.

> *"If we were to break a body down into its constituent parts, the body would no longer exist as a body."*

So what? Is that meant to explain or prove "emptiness"? If you kill an animal and cut it up, of course you will not find the life in it, or the consciousness it had, or its "animal nature". It does not follow that when the animal is alive and well, it lacks these things!

> *"The meanings of the words 'above' and 'below' depend on where we are. They do not have absolute meanings, It is like this with all words and all relationships between things" (p. 99).*

Again, a hasty generalization – from specifically relative terms to all words. Every grammarian knows that relative terms are just one type of term among others. That the former exist does not imply that the latter have the same character or properties. Similarly, Hsing Yun argues that the relativity of a word like "brightness" (our characterization of the brightness of a light is subjective and variable) exemplifies the relativity of all terms. But here again, he is passing from an obvious case to all cases, although many qualifications are based on stricter, scientific measurement. Moreover, describing how a piece of cloth may have various uses, as a shirt or as a skirt, he argues:

> *"It is the same piece of cloth in all cases, but since it is used differently, we have different names for it. All words are like this; their meanings depend on how and where they are used."*

This is supposed to convince us that words are "false and wavering" and help us to better understand emptiness. But the truthfulness and accuracy of language are clearly not at stake here, so the implied negative conclusion is unwarranted. The proof is that we all understand precisely his description of the changing practical role of the piece of cloth. "Cloth can be used as shirt or as skirt" is a perfectly legitimate sentence involving the natural modality "can" and two predicates in disjunction for a single subject (A can be B or C). Of course, if one starts with the idea that language can only consist of sentences with two terms and one modality (A is B), then one will

be confused by more complex situations. But if one's understanding of human thought is more developed, one does not fall into foolish conclusions.

Lastly, Hsing Yun refers to "the relative natures of our perceptions" to justify the idea of emptiness. He describes two people watching a snowfall, one is a poet sitting in his warm house, the other a homeless man shivering outdoors. The first hopes the snow will continue to fall, so he can enjoy watching it; the second fears that if the snow continues to fall, he may freeze to death. The author concludes:

> *"Both are seeing the same scenery, but since their conditions are different they perceive it very differently."*

Thus, perceptions are "false" and emptiness "underlies" them. Here again, his interpretation of the situation is tendentious, designed to buttress his preconceived doctrines. To be precise, the two people correctly perceive the (more or less) same snowy scene; what differs is their evaluation of *the biological consequences* of what they are perceiving (or more precisely still, what they anticipate to further experience). There is no relativity of perception involved! We have two quite legitimate sentences, which are both probably true "I'll enjoy further snow" and "I'll be killed by further snow". "I" being the poet in one case and the poor man in the other case, there is no contradiction between them.

By arguments like those we have analyzed, Hsing Yun arrives at the overall conclusion that:

> *"The universe can only exist because all phenomena are empty. If phenomena were not empty, nothing could change or come into being. Being and emptiness are two sides of the same thing" (p. 100).*

But none of his premises or arguments permits us to infer or explicate such conclusion. It is a truism that if your cup is full, you cannot add to it; or if you have no room to move into, you cannot move. But this is not what the author is here talking about; the proposed thesis is of course much more radical, though still largely obscure. All we are offered are dogmatic statements, which repeat on and on what the Buddha is claimed to have said.

I am personally still quite willing to believe that the Buddha did say something enlightening about interdependence, impermanence, selflessness and emptiness, but the words used were apparently not very clear. I just hope that his difficulty was merely in finding the right words to express his insights, and that the reasoning behind those words was not as faulty as that I have encountered in the work of commentators so far!

Still, sentences like the following from the *Flower Garland Sutra* are deliciously pregnant with meaning, challenging us to keep digging[16]:

> *"When wind moves through emptiness, nothing really moves."*

6. What "Emptiness" Might Be[17]

The following is an attempt to eclectically merge the Western and Indian idea of a 'soul' with aspects of the Buddhist idea that we are "empty" of any such substance. What might the 'soul' be, what its place in 'the world', what its 'mechanics'? Can we interpret and clarify the notion of "emptiness" intellectually?

> The Buddhist notion of "emptiness" (in its more extremist versions) is, as far as I am concerned to date, unconvincing. If anything is empty, it is the very concept of emptiness as used by them – for they never *clearly* define it or explain it. Philosophy cannot judge ideas that remain forever vague and Kafkaesque accusations. The onus is on the philosophers of emptiness to learn to express their ideas more verbally.

6.1 Imagine the soul as an entity in the manifold, of (say) spiritual substance, a very fine energy form somewhat distinct from the substances of the mental domain (that of imaginations) and of the material domain (that of physical phenomena, regarded as one's body and the world beyond one's body).[18]

6.2 While solipsism is a logically acceptable proposition, equally conceivable is the notion that the soul may be one among many in a large population of souls scattered in the sea of existence, which includes also the coarser

16 For instance, is there a state of consciousness in which one experiences space-time as a static whole?

17 This essay was initially written for the book *Buddhist Illogic*, but at the time I decided that it was not sufficiently exhaustive and consistent and did not belong there. I have since then improved it somewhat.

18 Note that animists regard even plants and stones as spiritual.

mental and material energies. These spiritual entities may well have common natures and behavior tendencies, and be able to impact on each other and become aware of each other.

Those many souls may conceivably be expressions of one and the same single Soul, and indeed mind and matter may also be expressions of that one Soul, which might perhaps be identified with (a rather Hindu viewpoint) or be a small emanation of (a more Jewish view) what we call God. Alternatively, the many souls may be interrelated more in the way of a network.

The latter view could be earmarked as more Buddhist, if we focus on its doctrine of "interdependence." However, we can also consider Buddhism compatible with the idea of a collective or root Soul, if we focus on its doctrine of an "original, common ground of mind." This refers to a mental ocean, whence all thoughts splash up momentarily (as seemingly evident in meditation). At first individual and psychological, this original substance is eventually regarded as universal and metaphysical, on the basis of a positivistic argument[19] that since even material sensations are known only through mind, we can only suppose that everything is mind. Thus, not only 'thoughts,' but all 'things' are mere turbulences in this primordial magma. Even individual 'selves' are merely drops of this mental sea water that momentarily have the illusion of separateness and personal identity.

6.3 For each individual soul (as for the greater Soul as a whole), the mind, the body, and the world beyond, of more matter, mind and spirit energies, may all be just projected 'images' (a viewpoint close to Bishop Berkeley's in the West or Yogachara philosophers in Buddhism). This is not an affirmation by me, I am merely trying to demystify this theory and take it into consideration, note well.

The term image, here, does not signify image *of* anything else. Such images are perhaps media of self-expression and discourse of the soul (or Soul). That is, the 'world around me' may be a language the soul creates and uses to express itself and communicate with itself (and with other eventual souls).

Granting there are objectively are many souls, we can observe that these souls have many (perhaps most) of their images *in common*. This raises an important question, often asked in relation to such Idealism. *If our worlds (including the physical aspects) are personal imaginations, how come so much of their contents agree, and how is it that they seem to be subject to the same 'laws of nature'?*

One possible answer is to assume the many souls to be emanations of a central Soul (animal, human or Divine). In that case, it is no wonder that they share experiences and laws.

Alternatively, we could answer that like images just happen to be (or are by force of their nature and habits) repeatedly projected by the many souls. In this way, they seemingly share a world (in part, at least), even though it is an imaginary one. Having delusions in common, they have perceptions in common. They can thus interact in regular ways in a single apparent 'natural environment,' and develop collective knowledge, society, culture, technology, ethics, politics and history. Thus, we are not forced to assume one common, objective world. It may well be that each soul projects for itself certain images that other souls likewise project for themselves, and these projected images happen to be the same upon comparison.

6.4 Viewed as a ball of subtle energy, the soul can well have its own spiritual 'mechanics' – its outer and inner shapes and motions, the creases and stirrings within it and at the interface with the mental and material (and spiritual) energies around it, the mathematics of the waves which traverse it and its environment, like a creature floating in the midst of the sea.

Consciousness and will, here viewed as different powers of projection, are the ways the soul interacts with itself and its supposed surrounds.

These wave-motion capacities of the soul, are naturally subject to some 'laws' – although the individual soul has some considerable leeway, it is not free to operate just any way it pleases, but tends to remain under most circumstances in certain fixed or repeated patterns. These (spiritual, psychological) 'laws' are often shared with other souls; but each of them may also have distinct constraints or habits – which gives each its individuality. Such common and individual 'laws' are their real underlying natures, as distinct from the image of 'nature' they may project.

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19 As I make clear elsewhere, I am not personally convinced by this extreme argument.

In the event that the plurality of souls is explained by a single great Soul, there is even less difficulty in understanding how they may be subject to common laws. On the other hand, the individualities of the fragmentary souls require explanation. Here, we must suppose either an intentional, voluntary relinquishment of power on the part of the great Soul (so that little souls have some ignorance and some freedom of action) or an involuntary sleep or weakness (which latter thesis is less acceptable if we identify the larger soul with God).

With regard to the great Soul as a whole, it may either be subject to limitations and forces in its consciousness and volition – or it may be independent of any such natural restrictions or determinations, totally open and free. Our concept of God opts for the latter version, of course – whence the characterizations of omniscient and omnipotent (and all-good, granting that evil is an aberration due to ignorance and impotence).

6.5 The motive and end result of theses like the above is ethical. They aim and serve to convince people that the individual soul can find liberation from the constraints or habits it is subject to, by realizing its unity with other individual souls. 'Realizing' here means transcending one's individuality by *becoming aware of, identifying oneself with and espousing the cause of*, other entities of the same substance, or the collective or root Soul. Thus, enlightenment and liberation are one and the same. Ultimately, the individuals are to abandon individuation and merge with all existence, melting back into the original source.

This doctrine presupposes that the individual soul self-constructs, and constructs the world around, in the sense that it defines (and thus effectively divides) itself out from the totality. This illusion of individuation is the sum of its creativity and activity, and also its crucial error. The individual soul does not of course create the world (which is its source); but it produces the virtual world of its particular world-view, which is its own prison and the basis of all its suffering, its "*samsara*."

Realizing the emptiness of self would be full awareness in practice that the limited self is an expression of the ignorance and stupidity that the limited self is locked into because of various beliefs and acts. Realizing the emptiness of other entities (material, mental and spiritual) around one, would be full awareness in practice that they are projections of the limited self, in the sense that such projection fragments a whole into parts. Ultimately, too, the soul is advised to realize that Soul, souls and their respective projections are one continuum.

Those who make the above-implied promises of enlightenment and liberation claim justification through personal meditative experiences or prophetic revelations. I have no such first-hand experience or authority, but here merely try to report and elucidate such doctrines, to check their conceivability and understand them. To me, no one making philosophical utterances can claim special privileges; all philosophers are equally required to present clear ideas and convincing arguments.

6.6 The way to such realization is through meditation, as well as altruistic and sane action.

In the framework of the above-mentioned Buddhist philosophy of "original ground" (also called "Buddha mind"), meditation may be viewed as an attempt to return to that profound, natural, eternal calm. Those who attain this level of awareness are said to be in "*nirvana*." The illusion of (particular, individual) selfhood arises from disturbances[20], and ceases with their quieting. The doctrine that the illusory self is "empty," means that we must not identify with any superficial flashes of material or mental excitement, but remain grounded in the Buddha mind.

For example, the Tibetan work *The Summary of Philosophical Systems*[21] warns against the self being either differentiated from or identified with "the psycho-physical constituents." I interpret this statement (deliberately ignoring its paradoxical intent[22]) to mean that there is nothing more to the illusory self than these phenomenal manifestations, and therefore that they cannot be the real self. Dogmatic Buddhists

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20 It is not clear to me how these disturbances are supposed by this theory to arise in the beginning. But this issue is not limited to Buddhism: for philosophers in general, the question is *how did the one become many*; for physicists, it is *what started the Big Bang*; for monotheists, it is *why did God suddenly decide to create the universe*? A deeper question still is *how did the existence arise in the first place*, or in Buddhism, *where did the original ground come from*?

21 See Guenther, p. 67.

22 Having dealt with the fallacy of the tetralemma in my *Buddhist Illogic*.

provocatively[23] insist that no real self exists, but moderates do seem to admit it as equivalent to the universal, original ground.

Buddhist philosophers generally admit of perception and conception, but ignore or deny direct self-awareness. Consistently enough, they reject any claim to a soul (spiritual substance), since they consider that we have no real experience thereof. For them, the "psycho-physical constituents" are all we ordinarily experience or think about, so that soul must be "empty" (of anything but these constituents) and illusory (since these are not enough to constitute a soul). But this theory does not specify or explain the type of consciousness involved in the Buddha mind, or through which "emptiness" is known!

Another way to view things is to admit that there are *three* sources of knowledge, the perceptual (which gives us material and mental phenomenal manifestations), the conceptual (which gives us abstracts), and thirdly the intuitive (which gives us self-knowledge, apperception of the self and its particular cognitions, volitions and valuations). Accordingly, we ought to acknowledge in addition to material and mental substances, a spiritual substance (of which souls are made, or the ultimate Soul). The latter mode of consciousness may explain not only our everyday intuitions of self, but perhaps also the higher levels of meditation.

What we ordinarily consider our "self" is, as we have seen earlier, an impression or concept, based on perception and conception, as well as on intuitive experience. In this perspective, so long as we are too absorbed in the perceptual and conceptual fields (physical sensations, imaginations, feelings and emotions, words and thoughts, etc.), we are confused and identify with an illusory self. To make contact with our real (individual, or eventually universal) self, we must concentrate more fully on the intuitive field. With patience, if we allow the more sensational and exciting presentations to pass away, we begin to become aware of the finer, spiritual aspects of experience. That is meditation.

(See also **Appendix 2**).

23 Looking at the history of Indian philosophy, one cannot but notice the *one-upmanship* involved in its development. The concept of samsara (which I believe was originally intended as one of totality, albeit a cyclical one) was trumped by that of nirvana (again a totality, though beyond cycles), which was then in turn surpassed by that of "neither samsara nor nirvana, nor both" (the Middle Way version). Similarly, the concept of no-self is intended to outdo that of Self.

6. Additional Topics

1. Present Appearances

1.1 **The Present Appearance.** The starting point of human knowledge (or opinion[1]) is what I shall here call the present Appearance (with a capital A), referring to ***the undivided totality of one's experience and thought at a given moment, taken at face value***. This is to be distinguished from appearances (with a small a), the **constituents** of the present Appearance, whose discrimination from each other require additional acts of thought, although the present totality may well include among its constituents discrimination between some of its constituents. It is also to be distinguished from **cumulative** appearance (or Appearance), a theoretical concept including not only the present moment, but also memory of all past Appearances, although the present Appearance may well include some memories of past Appearances.

These distinctions may seem like hair-splitting, but the point of the exercise is to draw the reader's attention to the fact that *moment by moment each of us is face to face with a limited sum total of objects or contents of consciousness* (whatever their nature and status, at this stage), and that this totality includes both:

a) *experiential* presentations – perceived material or mental phenomena and supposedly intuited[2] items of self-knowledge, be they real or illusory; and
b) *rational* presentations – products of conceptual or logical insights and processes, be they inductive or deductive, correct or incorrect.

Before any item of knowledge (or opinion) is isolated from its context for evaluation, it is immersed in the body of data in our present awareness; my intent here is to focus your attention first on this (varying) whole.

My initial goal here is simply *to enlarge* the phenomenological stance or approach, and apply it equally to all appearances, i.e. not only to perceptual phenomena, but equally to objects of intuitive experience and to rational objects and processes. The present Appearance is a complex intertwining of all these, logically prior to making any distinctions between them, acknowledging them all at this stage as just there.

Just as, before we can identify the nature of the phenomena of perception and judge whether they are real or illusory, we have to first simply be aware of and admit their *existence* and manifest *configurations* – so with regard to the objects of intuition and the abstract products of conception and logic, the first step is to take into consideration their contents and claims. This *ab initio* stance or approach does not in itself prejudice our final judgment concerning the identity or validity of reason, anymore than it affects our evaluation of experience. It is merely ascertaining just what is under scrutiny and discussion. Nevertheless, such open-minded consideration does indeed, in the long run, strongly determine epistemological and ontological conclusions. Many philosophical conundrums and perversions are due to failure to adopt this 'objective' frame of mind, taking all things at their 'face value' to start with, as appearances or presentations.

'Phenomenon' is a philosophical term intended to deal with objects of perceptual consciousness, without regard to various epistemological and ontological issues concerning them, such as whether they are real or illusory, material or mental, results of physiological sensory processes or mere fantasies, and so forth. Before such issues can be debated and hopefully resolved, we have to just 'look and see' what data we have in hand. Some distinctions

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1 I shall not keep repeating this. Strictly speaking, we count as knowledge only opinion that has been thoroughly checked, and evaluated by us as the best currently available in the cumulative context. But more loosely, the terms may be considered equivalent, in that we tend to regard our current opinions as knowledge!

2 I label 'intuition' our intimate, innermost knowledge of our self and its cognitions, affections and volitions. Such objects are experienced particulars, sharing with concrete phenomena the character of being cognized without rational process, but they resemble abstracts in having none of the 'sensible qualities' that distinguish material and mental phenomena. For further clarifications of these other terms used, please refer to the previous chapters.

between things are possible already at the phenomenal level – we can for instance distinguish the various 'phenomenal modalities' or the 'phenomenal qualities' within each phenomenal modality, without prejudice as to whether their source is sensory (although we label them conventionally as 'sense-based,' we only mean 'which naïve realism considers as sense-based') or imaginative. Or again, we can distinguish between 'material' and 'mental' phenomena (again using the words merely conventionally, with reference to people's everyday assumptions – but also somewhat with noticeable differences in their contents and qualities).

Philosophy has no terms similar to 'phenomenon' to refer to an intuitive experience or to an object of conception, prior to consideration of their exact nature and status. Kant's term 'noumenon' is inappropriate (and self-contradictory), in that it historically purports by definition to concern (and thus know) something unknowable. Locke's term 'idea' is also inappropriate, because its connotation of mental entity prejudices discussion at the outset and leads to serious problems and paradoxes. I propose here to henceforth[3] consider the term 'appearance' (or 'presentation') as more *generic* than 'phenomenon,' including concrete phenomenal appearances (i.e. percepts), concrete intuitive appearances (items of self-knowledge) and abstract appearances (conceptual and logical intentions). This larger term focuses on and emphasizes the primary '*manifest*' or '*given data*' aspect of all objects of consciousness, *considering them phenomenologically*, i.e. neutrally with regard to various philosophical issues.

The denotation of 'appearance' is the same as that of 'object,' but the former has the advantage of not tending to immediately connote the conscious Subject and his cognitive relation to the object (both of which some philosophers, notably Buddhist ones in the East and Hume[4] in the West, deny). Furthermore, the latter is often used with a naïve realist outlook, or with reference specifically to material entities, which we want to avoid, although strictly speaking the term is equally neutral (in my usage, at least). Similarly, the term 'thing' may have unwanted connotations (not clearly distinguishing existents and mere objects of thought), and in my opinion is best reserved for formal logic contexts. Thus, 'appearance' is the most appropriate term for phenomenology – and it is should be understood that phenomenology (despite its name) concerns all appearances not just phenomena.

And finally, to repeat, note that by 'Appearance' I mean the sum total of appearances at a given moment. So much for terminological issues, which are also of course clarifications of what we are trying to discuss here.

> Before proceeding further, however, I want to here remind the reader not to confuse the present philosophical discussion of knowledge (starting with the concept of the present Appearance, etc.) with the subject-matter itself. Our words (and their underlying ideas and arguments) about the present Appearance and its eventual transformations are, as themselves objects, parts or components of our common present Appearance, but they are not all of it. There are Appearances (most of our conscious life) that do not actually include the present philosophical discourse, though they are here being claimed to potentially (logically, upon reflection) implicitly do so. There are Appearances that are completely wordless, and also Appearances involving words but not the words of this here philosophical discourse, which is a late arrival in the development of knowledge.

1.2 **A Meditation.** Our above verbal definition of the present Appearance will not by itself provide a good idea of my intent, if the reader merely imagines a field of non-descript 'appearances.' The best way to grasp it is to actually sit down and meditate, *zazen*-style, and become fully aware of the panorama of sights and sounds and tastes and smells and sensations and of the images appearing in one's mind's eye and the words thought inside and their understood meanings – i.e. to become more fully conscious of whatever presents itself to one's attention right now. These experiences and thoughts are in flux, with one's attention shifting from one factor or process to another, often without rhyme or reason; they cannot be pinned-down or stopped, though continuous sitting over a long period tends to calm things down noticeably. What I mean by the present Appearance is the sum total of these multimedia events and characteristics at any given moment.

> Consider for example the Appearance I am facing right now (over the next few minutes, to be exact). I am sitting at my desk, in front of my computer, writing. Many things fill my awareness, though to different

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[3] In my past works I have often used the terms 'appearance' and 'phenomenon' as about equivalent.

[4] "Hume does indeed suppose the existence of impressions which are 'unowned' – a very strange idea," according to Hamlyn (p. 198).

degrees. I feel parts of my body, my behind weighing down on my chair, my back leaning against the back of it, my legs crossed, a pain in my knee, a foot on the floor, my hands on the keyboard, my fingers hitting the keys. I see the sunlight, the frame of my glasses, the desk and computer, its screen and the words on it. I hear a bird sing, a plane overhead, a car drive by. All these are sensory experiences, physical phenomena in my field of awareness. I may at times experience them more intensely, at others only peripherally, at others still become so absorbed in my work as not to notice them at all. Additionally, there are mental experiences. As I write words, I hear them inside my head. Occasionally, a relevant pictorial representation may flash in my mind's eye – a body in motion, a Cartesian space-time diagram, whatever. Extraneous mental words or images may come and go – such as 'remember to do so and so tomorrow' or a scene from a movie I saw yesterday.

Moreover, apart from the phenomenal aspects of my current consciousness, we have to take note of its intuitive and abstract aspects. The thoughts I am having are *mine*, I have to call on *discipline* to keep sitting and writing, I am trying to be as intellectually *honest and fair* as I can – these are intuitive components of my conscious content. The words I think and write have intended *meanings*, they are not mere sounds and letters, behind them is a large *context of knowledge* that I draw on, and I am constantly *applying logical skills* to ensure a quality product – these are abstract components of my conscious content. The present Appearance, then, is the sum of these three aspects, the phenomenal (material or mental), the intuitive (self-awareness) and the abstract (conceptual and logical). I am not at all times aware of them with equal intensity. Most of the time, I am absorbed in the subject-matter of my discourse, but I must still half-consciously look at the desired keys and guide my fingers to them as I type. My attention shifts from this detail to that, one moment into the meaning of a word, the next into a logical issue, then I feel a pain in my arm and press on it, and so on.

Thus, no two momentary appearances are identical, although the various factors and processes mentioned above may together last several hours. The scope of a given moment's awareness will include only some of these items, though over time all may appear. Over time, some will momentarily come to the fore, others recede; some will be the center of my attention, others only vaguely present on the periphery. Such variations and differences may be understood as changes in direction and intensity of awareness (as regards the Subject) or more phenomenologically as comings and goings and changing intensities of manifestation (as regards Appearance).

What we call appearance is a very complex and varied thing, which cannot be reduced to or limited to the more obvious sensory data. Note that the various constituents of appearance may not *all* be actually present in a given present Appearance. It may be correct to say, however, that most are usually present, if only peripherally. Perhaps we should consider that each constituent is potentially present, though it may not be a major focus of attention at a given moment, compared to the others. Note also that our turning of attention on one or the other factor may be experienced as spontaneous or as the result of will.

The present Appearance, then, is whatever appears to someone at any time, considered as a whole, temporally or logically *prior to* any discrimination or judgment concerning it or its constituents, i.e. before or irrespective of any further reflection of reason. It is *mere presentation, raw data*. At this stage of things, we may be completely absorbed in it and unconscious of precise details. There is no prejudice, at this primary stage, as to whether what appears is 'true' or 'false,' 'reality' or 'illusion,' 'representative' of anything or not, 'absolute' or 'relative.' All these and similar characterizations are later developments (rational acts), though within some moments they may well be present as themselves 'constituents of' the present Appearance.

We have not or not yet discriminated between the 'parts' or 'components' of the present Appearance. We have not or not yet compared and contrasted its parts or components, finding them same or different to each other or to memories in various respects. We have not or not yet applied any logic to it; at this stage we have just a single 'A' and have not said 'A is A' or 'A cannot be non-A' or 'either A or non-A.' We have not either considered whether what we face is perceptual or conceptual, concrete or abstract, physical or mental, objective or subjective, internal or external, or whatever. We have not or not yet made a distinction between its various 'sense-modalities' (sight, sound, touch, smell, taste), nor between the various 'sensible qualities' (e.g. shape, size, intensity or color, in the case of visual aspects). We have not or not yet located things in space, or developed notions of perspective or space dimensions. We have not

> or not yet separated pure present from memories and anticipations, or located things in a dimension of time. We have not or not yet engaged in the ordering of given data by which we divide it into Subject, consciousness, Object, self, intimate events and characters, mind, own-body, sense-organs, other physical bodies.
>
> We have not or not yet performed any such *rational* acts (rational in the sense of proposed by reason, whether rightly or wrongly). If later we are able to and do subdivide the present Appearance into such factors and processes, the particular appearances such subdivisions constitute (whatever their own nature, whatever they themselves happen to be – even if abstract, conceptual and logical) are themselves parts or components of the present Appearance at the time they occur. Thus, the present Appearance may sometimes indeed well include 'philosophical' reflections, but we here consider them as at the time concerned inherent in the given particular present Appearance. It always remains a comprehensive whole, in this perspective.

Some may argue that such a totality is unconscionable, that we can never in practice absorb ourselves in the whole without at the same time discriminating at least some of its aspects. Others will agree that ordinary consciousness is compulsively discriminative, but claim that we can overcome such handicap through meditation. But what I refer to here is just being aware of whatever you happen to be aware of right now, or at any given moment, including any eventual discriminations themselves involved in the whole. This is accessible to all, at all times, without special skill or training, at least for a brief while. In any case, the present Appearance is at least theoretically comprehensible, ex post facto, by logical aggregation of its constituents into the intended whole.

1.3 **Temporal Aspects.** Now, granting the above is understood, it is important next to clearly acknowledge the present Appearance's temporal aspects.

By *a moment*, I here mean a duration of time (as distinct from an instant, which is a point in time, the beginning or end of a duration) spanned by one's attention. And I refer to it verbally for the purposes of this analysis, but in the moment itself there may not be or not yet be any concept of time or of attention. It is merely mentioned to direct the reader to the situation under consideration, namely that the present Appearance is extended to some extent over what we later refer to as time (objective or subjective). The boundaries of the moment may well be unclear, such uncertainty being itself a 'constituent of' the present Appearance. But the latter is still undifferentiated, so one's eventual doubt about limits has not yet crystallized.

Moment after moment, we are presented with a 'new' present Appearance. We refer to it as *new*, with reference to 'memory,' implying that a comparison is occurring between the present Appearance and a preceding Appearance, and that these are found in some respect(s) different. Such comparison or contrast is of course a rational act, full of assumptions about the 'validity' of memory. This is not denied, and we may return to the issue. But for now let us merely note this evidence, that the present Appearance *seems* limited in 'time.' Notwithstanding that the present Appearance is something singular in its temporal existence within our consciousness, there are *seemingly a plurality* of Appearances anyway. The remembrance of 'past' Appearances is itself of course part of the 'present' Appearance, and its distinction from the whole is an artificial, i.e. rational, act.

Next, we have to be aware that *if* in any given moment, relative to the given present Appearance, a new rational act occurs (such as the ones just proposed, of distinguishing memory of past Appearances within the present one or anticipating future Appearances), the present Appearance is thereby *changed*. That is to say, the addition of a new thought produces a new present Appearance, so that the one we seem to have faced a moment ago is strictly-speaking not quite identical to the one we face now. The present Appearance currently under scrutiny includes this new thought, which was intended to transcend the preceding present Appearance without affecting it. Thus, if I face a present Appearance and even just name it 'A,' I am no longer in present Appearance A but (momentarily, at least) in a new present Appearance which includes 'name A' in its composition, and so would have to be named something else, say 'B,' which in turn would cause the occurrence of yet a third, and so on.

This fragility of any present Appearance has to be clearly realized. More generally stated, the moment we focus on any aspect of a present Appearance, or distinguish its parts or components, or characterize it or them in any manner whatsoever, we perform a *rational* act. Such rational event involves phenomenal aspects (e.g. images and words) as well as non-phenomenal ones (intuitions, conceptualizations, logical verifications), whose appearance (whatever the cause of such appearance might be: spontaneous generation, a mechanical brain, or a Subject's volition) modify the original present Appearance, presenting us with a new present Appearance including the

rational act and possibly all of the preceding present Appearance. In some cases, the rational act, by its very nature, not only adds to the preceding Appearance, but also erases parts or components of it. Thus, when I concentrate my attention on the outlines of a figure, I see the outlines more intensely than before and somewhat or entirely cease to see its color and perhaps other figures in my field of vision. These now seen outlines are not quite identical to those seen a moment ago, and any comparison between them (between the present and my memory of the immediate past) would constitute a rational act. The latter would in turn modify the present Appearance, presenting me with a new one, and so forth.

Thus, we cannot claim to rationally 'transcend' any present Appearance and discuss it without admitting our discussion as itself within the (next) Appearance[5]. We can only seemingly produce (or find ourselves faced with) new Appearances, which by further rational acts (involving reliance on memory and other judgments) are successively transformed into still newer Appearances. Being aware of this fragility, we are better able to delimit what we mean by a single present Appearance or the current totality of experience and other conscious content. We are always bound to present Appearance.

Furthermore, we are all aware (or ought to be) that our minds are constantly and almost irrepressibly a-buzz with thoughts. This is especially evident when we try to still our mind during meditation; it is a very, very difficult task. That is, the present Appearance is not merely occasionally changed by thought, it is almost always *in flux*. Only mastery of meditation can ever (supposedly) stop this constant activity. Even sitting still in the middle of a static environment (say a plain room where no sound enters, etc.), thought continues to affect the present Appearance (e.g. I notice the right side and then the left, or reflect on the color, etc. – not to mention extraneous thoughts such as my recent conversation with someone or what to add to my 'things to do' list or ongoing philosophical discourse or personal injunctions to be thoughtless), so that the present Appearance is always short-lived and changing. What this means, is that we can even generate a notion of time by referring only to the shifts in our attention, and more generally to our changing intuitive contents of consciousness and rational responses to experiences.

However, such so-called subjective time inextricably relies on analysis of a present Appearance and the assumption of memory. It is only by distinguishing a fraction of that Appearance as being a lingering image or memory residue of a preceding Appearance, and comparing that fraction to the remainder, that we can and do conclude that (subjective) 'time' has passed. But there is, I am convinced, a more 'objective' concept of time, based on the content of some Appearances *without reference to memory*. That is, we *see* (in the sense of 'perceive, by whatever means') some phenomenal contents move or change (in place or otherwise) *within* the current span of attention. We may of course *additionally* remember that the entity, character or event concerned (whatever it be, real or illusory, physical or mental) was different in a previous present Appearance, but here what interests us is movement within a single, present Appearance.

Such movement within the moment, i.e. perceivable without reference to and assumption of memory, and so without rational activity, is *purely experiential* movement. It means that '*the present*' we perceive is not a point in time, but a stretch of time, a duration. That is, our consciousness of events is not instantaneous, but straddles time (at least, a bit of past to the present instant). This portion of time that our awareness can span is what I here call a phenomenal 'moment.' How long precisely such moments are is hard to say. It may be that they are all equal or they may differ from one present Appearance to another or one person to another. To affirm the experienced present as extended does not, by the way, logically exclude that time be infinitely divisible (continuous). Appearances may well constantly overlap and flow into each other, without affecting the fact that our consciousness of phenomena is extended in time.

It makes no difference whether one considers perceived movement as objective or subjective – in either case, the phenomenon still occurs, still exists. To say 'objects do not move, but are stationary world-lines in a space-time continuum; it is the Subject's awareness of them which moves (scanning) or comes on and off and on again (like a stroboscope)' does not explain-away or erase the phenomenon of movement – for then we would still have to

5 Just as we cannot logically claim to know something outside Knowledge or that there are existents beyond the Universe or that there are miracles contrary to Nature – since concepts such as Knowledge, Universe, Nature are *by intent and definition* open-ended and *all*-inclusive.

acknowledge and explain the Subject's motion over or through the continuum or the changes in his awareness. Similarly, whether we regard movement as continuous or as composed of instantaneous starts and momentary stops, is irrelevant – since in the latter case, too, we still have to deal with change from start to stop and vice-versa (i.e. that too is 'movement').

Our very concepts of time and memory are based on the direct experience of movement, so we cannot logically claim to know time only indirectly through memory. If we claimed that all experience was instantaneous, and that we only conceive of movement by rational acts – i.e. by mentally outlining within static Appearances a 'memory' segment and a 'non-memory' segment, and comparing these segments find that the former has enough similarities and dissimilarities to the latter to conclude that 'movement' has occurred – we would be begging the question. For all these mental acts are presumably themselves events, which in turn alter the present Appearance however slightly; and anyway we would be left with only a static picture of things or a static string of meaningless words! The *image or concept* of a geometrical time-dimension or time-line, however useful for purposes of measurement, is inextricably and infuriatingly *static*, and incapable of reproducing or representing movement. Only through *experience* can movement itself be known and understood. Rational constructs such as time and memory are merely attempts to interpret and explain our experiences of movement somewhat, and cannot deny or replace them.

2. The Concepts of Space and Time

I have already made some comments about space and time in the chapter on Organizing Principles and in the above section. I wish to here make some additional comments.

2.1 Time and space are fundamental aspects of world of appearance, because they constitute for us logical solutions to apparent problems in momentary experiences or straddling experience over time. The apparent 'contradictions' inherent in multiplicity, non-uniformity, movement and change oblige us to resort to these conceptual remedies. Such fundamental concepts are not 'logical concepts' (as e.g. Jean Piaget regarded them) but products of logic. They come to seem like 'logical' concepts, because they are so broad-ranging that they structure all our thinking. But they remain *doctrines*, as far as logic is concerned. That is, they are proposed responses to issues raised by our logical insight. While specific hypotheses of the special sciences of time and space may in some future context have to be revised, logical insight continues to reign unscathed.

2.2 **Space** is a conceptual construct, in that it we presume a relational arrangement between the different parts of an experiential (primarily the visual) field. We begin with a distinction between the *first two* dimensions of space and then find it wise to add the *third* dimension. The first two dimensions are more empirical; the third is more hypothetical. If one looks out at the world with one's eyes (or at an inner image with one's mind's eye), one seems faced with a two-dimensional blob of light (of variegated color, intensity, brightness); the third dimension is eventually distinguished out from these first two (partly to interpret the said variations).

Our 'sense' of space is primarily based on sight, but eventually built up from data drawn from several senses, including hearing, touch and to a lesser extent smell and taste. It is with reference to the combination and correlation of these sense-modalities that we obtain our full concept, even though sight remains the central reference. Note however that blind or deaf people seem to have a sense of space, but I assume it is an imperfect one compared to persons with all their senses (this matter can be studied by experiment and questionnaire). Even smell and taste are related to space: we can seemingly tell the rough direction from which a smell came; we locate tastes within the volume felt inside our mouth. Correlations with visual imagination and the sense of touch are of course involved, here. Smell and taste, per se, play a relatively secondary, passive role in our grasp of spatiality, but the same is perhaps not true for animals, or even babies.

Parallelisms between the sense-modalities are first gradually established for two dimensions, and then extended into the third with reference to phenomena of motion and perspective. I must apparently move my hand or body to there to touch that place; sounds may vary in consequence of such displacements; things change shape as I or they move and I explain such changes through the laws of perspective.

Another set of factors involved in our construction of space is temporal. Space is not merely a moment-by-moment construct, but one that appeals to memory and anticipation. We collect *memories* of static and dynamic

sense data concerning space and refer to these past occurrences to interpret present ones. Also, we use *mental projections* to express our interpretative hypotheses. For instance, I may think: "I would need to stretch out my hand thusly to touch that" to express spatial depth. Such imaginations may or not be put into action (of course, they must occasionally be or have been, to be confirmed), but may in any case be viewed as a futuristic aspect of our space concept.

All this goes to show that space is not apprehended immediately (merely as extension or distance in a visual screen), but is a complex concept built up using many factors. The Subject is *active* (whether instinctively or consciously) in this build up, intellectually in having to correlate very various experiences over time (a trial and error process) and even physically in having to experimentally move about, the whole body or members of it. It follows that *volition* is involved; one is not a mere passive observer. Yet, for all that, I do not conclude like Kant seems to that space is a subjective invention.

All it means is that the concept of space is a complex *hypothesis*, consisting of many subsidiary hypotheses (like perspective or volition, to mention two). We do not simply see space (though sight is involved), nor can we deduce it from our experiences – we have to *induce* it. We propose it as a way of ordering of the various data of our experience. It remains conceivable that we are wrong. Indeed, we have been wrong for long periods, thinking of space as having Euclidean properties, until mathematicians suggested this did not have to be so and Einstein found need for a non-Euclidean approach in Physics. We may well be called upon by new experiences to tailor our view yet again; even conceivably completely overturning it somehow.

Meanwhile, in the context of experience and hypothesis so far, it seems logically the best ordering, ensuring the strongest correlation and least conflict between our masses of different sense impressions. We acknowledge thereby Appearance as a multiplex, and at the same time manage to 'make sense' of it to an additional extent.

2.3 **Time** is also a conceptual construct. The direct experience of time consists in awareness of the present, moment by moment – the "eternal present" (so-called, though it is only as long-lasting as the Subject lives). I say 'direct,' to differentiate it from the intimations of past and future involved memory and anticipation, which we may regard as an indirect experience of time[6]. And I stress 'experience' to distinguish all this from the more intellectual construction of time, which comes later. Now, the present seems to have some ***duration*** or stretch, which is why I refer to it as a moment rather than as an instant. This temporal extension may not be constant for all observers at all times; sometimes we seem to be able to experience a larger chunk of time than at others.

For it seems evident that ***motion*** (i.e. movement in space or change of any kind) is in part phenomenal; it seems observable within a given moment, and is not merely a construct based on the comparison and contrast of the phenomenal situations in different moments. In other words, I am proposing that our consciousness can *straddle* a stretch of time and thus cognize segments of motion without appeal to memory or prediction. Such visible bits of motion are to be distinguished from larger segments, which are constructed with reference to alleged memories and predictions. The former motion is empirical; the latter involves certain assumptions.

The concept of time is built in response to the paradox inherent in all motion, whether phenomenal or inferred from memories or expectations. Movement or change, however gradual, signifies that something is so-and-so 'at one time' and something else 'at another time.' If we do not insert the qualifications 'at one time' and 'at another time,' the preceding definition of motion is self-contradictory, saying that something both is and is-not so-and-so. By means of these differentiating inserts, we dissolve the paradox. Thus, time is a *hypothesis* proposed to deal with a logically disturbing aspect of certain common experiences. We project an extension called time, similar in some ways to the spatial extensions[7], in which phenomena have partial existence – so as *to explain* how it is possible for them to vary before our very eyes (and indeed all our cognitive instruments).

Thus, time 'comes from' man in a sense, but it is also somewhat 'given in experience.' It is an *inductive* construct seemingly corroborated by experiences, rather than something directly experienced or an abstraction in the ordinary sense. In my view, the experience of phenomenal motion is indubitable; if motion were only known

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6 Husserl seems to have regarded the past and future aspects of objects as an intrinsic component of their present, whereas for me they are built up out of the present by means of various assumptions and inductive processes. They are by no means given through any transcendental consciousness.

7 But different in some respects: e.g. in having only one direction.

through memory and expectation, it would itself be hypothetical. In that case, time would not be a logically necessary response: we could also (and better) explain away the paradox inherent in motion by denying the reliability of memory and prediction. We must admit what we all experience daily, that (some) motion is empirically given.

This means that "the present" is extended, a duration and not a mere point of time. The hypothesis of time includes the distinction between past, present and future, which three elements it joins in a continuum. Note well, three elements, not two. If we arbitrarily cut time in two (past and future), viewing the present as but an instant, where would the present moment fit? Would it be part of the past or of the future or a bit of both? It is hard for us to tell, because a moment is so brief. I think the present is neither past nor future, so that the dichotomy past or future is artificial. The present is neither a residue nor an inchoate; it is distinctively here and now.

The above remarks do not of course even begin to fathom the mysteries of time; many queries remain. Why do we only directly experience the present? Are we stationary and events pass or is the world stationary and our spirit flies over it? Is the present always changing, or is it things that change while the present remains the same? What happens to the past or to past things, where do they go, or do they cease to be and what does that mean? Where are the future and future things, where do they come from, or do they come to be and what does that mean? Why are past, present and future different in their existential properties? What is the direction of time? These are some sample questions that come to mind, which I would not pretend to have (or have seen) answers to.

2.4 Some small additional comments on the distinctions between **inner and outer** (i.e. mental and physical) space and time. In this context, it is well to keep in mind that the phenomenal modalities and qualities perceptible in our mental world (color, shape, sound, etc.) are identical or similar to those perceived through the senses as being in the physical world. Such analogies force us to regards these domains as parts of one world.

With regard to space, it is more acceptable to posit an inner space in contrast to an outer space. For two different substances (the mental and the material) seem involved, and therefore two different fields or matrices are conceivable for them. We consider mental space as somewhat placed within material space, in that we tend to locate it in our heads[8]. Yet, even here we should perhaps not rush to judgment. For we must take into consideration the fact of *hallucination*: when we seemingly imagine things occurring outside ourselves. It may be that we think of imagination as in the head, because we usually do it with our eyes closed or because it is usually clearer that way. But there are circumstances when we are able to imagine with our eyes open[9]. It remains conceivable in my view that the two spaces, the inner and outer, are one and the same.

Some philosophers apparently distinguish between inner and outer time, or psychological time and physical time, with reference to the common experience that little time o'clock may subjectively seem a lot and long hours may seem like minutes. Admittedly, one's happiness or patience or age[10], or whatever, evidently often have an effect on one's *guesstimates of duration* without measuring instruments. When I meditate in the middle of the night, when everything is quiet, time seems to pass much faster than when, in the day, there are enervating traffic noises all around. But this does not mean that there are literally two time dimensions.

The Subject, whether faced with imaginary events or physical events, has the same logical reaction for both, the positing of a time dimension. It has to be a single framework for both kinds of event, or else it would not be possible to order them relative to each other, as indeed by the way the 'psychological time' proponents

8 But note that mystics lay claim to a very large mental space. One perhaps as large as material space, existing in parallel somehow. Or larger still, and including it.

9 If we pay attention, it is evident that some degree of hallucination is possible in ordinary situations, and not only in extreme conditions, like meditation, drugs or sickness. Also, as I have argued earlier, we need this ability to make certain judgments (e.g. in comparing phenomena). It is not so difficult to conceive how it might happen: since what we see is the front of light coming from an object impinging on our visual receptors, it is at that place of impact that projections from us outward would need occur. That these projections seem to be yet further out is a simple optical illusion, due to a superimposition. Thus, hallucination may simply be a distortion at the visual receptor (or perhaps even in the eye lens). Similarly for sound hallucinations.

10 The older we are, the feebler our memory seems to get, and the faster time seems to pass. This is perhaps a function of the strength of our memory - how quickly it fades.

unthinkingly do anyway. (I of course do not mean here to contest the relativity of time measurement, as explained by Einstein, which concerns even physical time.)

3. Apprehension of the Four Dimensions

The four dimensions of our experience do not arise in knowledge in the same way; they are not all equally empirically based, involving different kinds and varying degrees of intellection, and they differ also in their assumed properties.

3.1 The **first two** dimensions of space refer to the flat field of (mainly) visual perception as presented to us phenomenally by the optical (and other) sense organs or by imagination in the mental matrix. This visual field is without depth, but testifies that the world of experience, whether physical or mental, is extended – a phenomenon we label space, distinguishing in it two aspects (called dimensions – length and breadth). The latter mental act of differentiation could rightly be characterized as an act of intelligence[11]. It requires a creative mental activity (consciously or not, projecting N-S and E-W lines – an imaginary grid – onto the visual field), and therefore (presumably) a certain involvement of the will.

Another act of intelligence, occurring already in a context of two dimensions, is the idea of *direction*, which includes not only projecting an angle of vision relative to some origin (a line on our grid), but also pointing one's finger or tracing a from-to trajectory with it. Direction is often also communicated symbolically, by the very prehistoric image of an arrow (this aspect being pure analogy to a specific visual experience of actual arrows, their trajectory along our line in space); the arrow can traverse the line in two ways, called directions, according as it eventually reaches one or the other end of the line. This concept is later reused in the other two dimensions.

Visual experience is of course amplified by experiences in other sense-modalities. Thus, the frequent roving of one's eyes up and down or left and right amplifies our sense of two-dimensional space. Other touch sensations, such as running one's hand over a surface, likewise play a role, as do sensations of sound (and to a much lesser extent – for adult humans, at least – smell and taste).

3.2 The **third** space dimension arises in the observer in a more complex manner, involving more abstract considerations and a more active role for the observer. In the physical visual field, the assumption of depth (relative to the observer, me or you) serves to account for various phenomena, such as the different intensities of light and shade, apparent movement of distinct forms (i.e. shapes and colors selected by the observer as distinguishable), movement that may occasionally be experimentally assumed by the observer (potential involvement of volition) – things (granting continuity of phenomena) moving away-towards us (the origin or center of perception), getting bigger-smaller. Events that seem bizarre in a flat world become more understandable (explained, unified, predictable) in an assumed voluminous world.

In addition to such visual aspects, the touch-sensations in our eyes as we focus or unfocus them play a considerable role in convincing us of depth. Still other experiences must be taken into consideration too, such as feelings of bodily movement as well as pressure and roughness (touch sensations), sounds of varying loudness (hearing), smells in different directions and even the cavity in one's mouth.

In the mental field, the third dimension (broadening the term dimension to include it) is admittedly often virtually absent from the inner visual field; but that the third dimension can be projected in the mental matrix is doubtless being proved by the very question (which presumes – thus, admits – that it has been imagined). Furthermore, we can introspect our apparently doing it and dreams often seem three dimensional, anyway.

The third dimension arises to resolve puzzles inherent in experience, such as correlating different perspectives on a seemingly continuous phenomenon (throughout a movement) or correlating the messages in distinct sense-

11 Others might say, stupidity. I refer here, of course, to Zen claims to perceptual experience free of any intellectual interference. Buddhists ultimately regard intellection as stupidity, in that such judgments alienate man from pure contemplation of the phenomenon as it presents itself, breaking the nirvanic unity into a samsaric multiplicity. They may well be right; nevertheless, within a rationalist framework, differentiation would be counted among the acts of intelligence – so conventionally, at least, this term is appropriate.

modalities (or due to different sense-organs), and more broadly to integrate various experiences (e.g. the apparent unity between different apparitions, allowing one to regard them as one phenomenon in motion). The observer imagines this new dimension and presents it to himself as a *credible hypothesis* so as to explain or explain away his various inquiries and concerns. In each specific situation, the initial hypothesis is taken for granted, though it might later be supplanted by another that seems equally or more credible (the process is inductive, an adduction).

The main puzzle we try to solve through the third dimension is the apparent contradiction in different perspectives of an object. As the observer apparently moves around (that is, as his own body goes through certain variations in shape or feel), the external object seems to change in certain respects. Man has found that by projecting a third dimension of space, he could account for the perceived variations in experience of the first two dimensions. He formed the concept of perspective – he discovered (to some extent invented, insofar as a mental projection was involved) the relativity of appearances and their possible interconnections.

In this proposed description of the emergence of the third dimension, we see that it arises as a quasi-experience, but on closer inspection clearly involves inductive processes and imaginative projections of ideas and explanations. This is not a criticism, but intended to underline the different – more abstract, more conceptual, more active – status of the third dimension, in comparison to the first two. It is called a dimension by stretching of the meaning of the term dimension. It is assumed to have the same nature of extension, but more thought processes are required to conceive of it than to mentally separate the first and second dimensions from each other. These are acts of intelligence (a faculty of the observer), formulating concepts and frameworks, using imagination and inductive (including deductive) means, attempting to 'make sense of things.'

3.3 The **fourth** dimension – that of time – has a yet more distinct emergence. Time relates distinctively to the puzzle of movement. Movement (including forms of change, qualitative or structural, other than motion in space) is I suggest a primary object. That is, together with objects like shape or color it is an experiential *given*, empirical fact in the strictest sense of the term[12]. All such primaries contain puzzles to our minds, and we itch to resolve them somehow (by curiosity – or perhaps biological need).

In the case of movement, the puzzle is an apparent contradiction inherent in any movement: how can what the observer has assumed is the 'same' thing, be somewhat 'different' in each of its many apparitions. The concepts of same or different are logical primaries; comparison and contrast are basic thinking processes. The impression that something is the same or different, following mere observation and followed by grouping and naming, gives rise to (or is at least the basis of) all abstraction, concept-formation, classification. For these reasons, movement stirs the observer to reconcile his conflicting impressions through some conceptual device. Man has chosen as his device against movement the idea of a fourth dimension.

But here, the concept of dimension must be stretched again, to allow for various distinctive characteristics of the proposed fourth. For a start, its different genesis, as described above. But then also, this additional dimension cannot be (however phenomenally) walked into like the others and only a single 'direction' (instead of two, like the others) must be posited for it (in order to account for the non-return of/to objects once overtaken in time, as against the apparent possibility of moving back and forth to or from an object stationary in space). A distinction arises between past and present and, at a later stage, future.

Clearly, one's understanding of the other dimensions is also tainted by time, although more implicitly, in that one's experimental body movements in search of perspective changes take time. But such understanding is ex post facto because the *concept* of time does not arise until (or unless) the fourth dimension is postulated. More precisely, the notion of time historically (and in individuals) arises well before that of a fourth dimension; but as man has further reflected on the subject, he has realized (or come to believe) that time logically implies/requires a fourth dimension. Similarly, of course, space arises as a notion first, and is then further structured and buttressed as a concept by introduction of the three dimensions.

3.4 Clearly also, the concept of *memory* is deeply linked with those of change, time and a fourth dimension. The hypothesis of memory is one of the postulates in the complex theory that seeks to resolve the puzzle of movement. Its role is to explain, not where things go after they are past us (that's a purely time puzzle, an ontological one), but more introspectively how come we continue to be aware of something after it is gone (an

12 I discuss this more fully in *Buddhist Illogic*.

epistemological puzzle). A "memory faculty" is proposed as at least an ability to store past impressions and observations (shunting aside the possibility of direct consciousness of past events as too heavy a postulate, initially at least). Just how such storage is possible is still mostly a mystery, but it suffices to suppose that it does occur somehow.

Memory is thus conceived to account for our apparent knowledge of past events that are no longer immediately present (in the phenomenal field currently observed). To account for the evident disappearance or waning of certain memories, we admit the idea that memory varies in permanence and intensity and vary its reliability accordingly. In this context, various degrees and kinds of memory must be distinguished, based on our experiences of remembering – and forgetting. Sometimes it takes us more time and effort than others to recall something. Sometimes we can, voluntarily or not, *recollect* a representation (inwardly project an image) of past events with varying clarity and precision, while at other times we are only able to *recognize* an event reminded to us (that is, after it reappears to us in some guise) as similar to a past one (for instance, looking at an old school photo and recognizing a face one had totally 'forgotten' – in the sense that one had to be reminded of it).[13]

3.5 On the other hand, for *the future*, we propose no special faculty. We normally distrust apparent anticipations of phenomena, and regard them as fantasies. They are mental projections of what the future *might* but will not necessarily hold, and not sure forecasts. Some people believe in prophecy of the future, by themselves or by other people; but most people doubt this notion. The concept of a future as such arises by the intelligence that "if past events were once present, then present events '*will* at some time' be in their turn past."

The fourth dimension thus arises in three stages, first comes the currently experienced present, then comes the past in the form of mental images that we relate to other present events, calling them the 'same' entity at 'different' times, and only lastly comes the future, by way of the said intellectual act.

But though we believe *that* there is a future (without offhand denying the possibility that it might not happen), we do not necessarily subscribe to the idea that we always know *what* that future will contain. We do not therefore normally presume a faculty of seeing into the future itself, not even an imperfect one like memory. We do however believe we can ascertain what the future might or could hold (a more modal knowledge), and even estimate that such possible event will more likely occur than such other (probability rating – another logical act). That is, the content of the future is thought of as accessible by inductive means (including deductive means). An indirect knowledge through concepts, propositions and logical tests – a knowledge not imprinted by its object, since its object does not 'yet' exist other than within the mind conceiving it as a possibility or potentiality, and indeed such object may never actually (come to) exist.

3.6 Clearly, we must say that the fourth dimension, assigned to time, is considerably different in its foundation and properties to the preceding three, assigned to space. I say 'preceding,' not to insist that the conceptualization of time is temporally after that of 3-D space, but only to reflect the increasing difficulty and complexity of their respective genesis. I can conceive of space (of one, two or three dimensions) without time, a static phenomenon, but not time without space (since time only arises given an experiential field of changing forms – we know of no movement without a manifest field of phenomena in an apparent space of one or more dimensions).

Another question would be, does time require a world of three dimensions of space? The answer would be that even one dimension suffices to give rise to the concept. We can certainly imagine a world without a third dimension of space, a phenomenal field of flat forms shifting around. The puzzle of perspective would be absent from such a world, but the puzzle of movement would remain, calling for the same conceptualization of time as did a three-dimensional world. Similarly, perhaps, for a world with one solitary dimension: segments of the world-line might be seen (if a mere line can at all be seen) to shift back and forth along it, which movements would be explicated by means of the time concept. But not of course, a zero dimensional world – such a point of existence is inconceivable (it would manifest nothing and therefore not be visible to any observer).

3.7 An issue that should be mentioned here is that of definition of "the present." In one view, the present is a point in time without extension, the current *instantaneous* boundary between the past and the future. However, this view is by its very nature the more intellectual, since points are not perceivable, but inferred from extensions

13 In this context, see my *Future Logic*, chapter 62.2.

(to repeat, as boundaries between them). A more empirical view is to regard the present as extended in time, a *moment*, including a recent segment of the past (or perhaps straddling a bit of past and future, though that is a more difficult and conceptual position). This view is suggested by our apparent perception of movement (motion or change).

That is, if we grant movement to be an empirical given, a primary phenomenon, it means that we can apprehend some movement *with one look without using our memory*. If, on the other hand we said that movement is only knowable through memory, our above description of the concept of memory, as together with time an intellectual device for resolving the contradiction inherent in movement, would be weakened as being without empirical grounding. We may thus prefer to regard that we *perceive*, not merely static photographs of the phenomenal world, but indeed a cinematic display covering a certain stretch of time (the present moment). The static view of the phenomenal does not seem credible considering that the flash would be too 'quick' for us to register that anything at all occurred!

This view of the present as momentary does not exclude that memory come into play peripherally, *in addition to* perception, to further ground the present into the past. Such memory work is of course intellectual, involving judgments of continuity and causality (between the experienced moment and preceding ones no longer actual but suggested by memory). Inductive processes are involved, in that memory is of varying reliability and has to always be reevaluated contextually. Moreover, we tend to think that the moments we perceive are of varying breadth, according to our mental states. In some states, they are very narrow, in others wider (some people even claim prophetic ability to perceive very large chunks or all of time – the 'timeless or eternal' present).

3.8 The above accounts only attempt to detail the early stages of apprehension of the four dimensions. Many additional questions are eventually encountered and answers proposed, as these concepts are further scrutinized and developed.

For example, questions as to whether space and time are infinite[14] or finite (and in the latter case, what its size might be), and what geometrical axioms/system(s) is/are applicable to them. Gradually other kinds and degrees of interdependence between space and time have thus been proposed. Notably[15], the idea of additional dimensions (conceived by post-Cartesian mathematicians by algebraic methods, generalizing from the initial dimensions), Einstein's view of space and time as bound together more deeply still (for instance, in his theory of Relativity, events separated by space cannot readily be granted simultaneity[16]), and Hawking's suggestions that time has a beginning if not an end, and that space may expand (the Big Bang) and perhaps contract (the Big Crunch)[17].

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14 A notion fraught with difficulties. See my *Future Logic*, chapter 66.3.

15 Not to mention the revolutionary ideas of quantum mechanics, according to which a particle does not have a specific place at a given time but only variously probable positions – really, not just in knowledge (Bohr).

16 What Einstein brought into consideration here is the issue of *the measurement* of space and time. How we come to measure them is quite a different issue to the one treated in the present exposé, as to the apprehension of space or time as such, irrespective of precise magnitudes. His innovation was the simple realization that our measurements of space and time are not made with an absolute measuring rod or clock, standing outside of them, but rely entirely on comparisons between phenomenal events – they are relative to practical acts involving movements of bodies or waves. Given this insight, the constancy of the velocity of light has deep implications regarding the structure of space-time.

17 I must say that such ideas remain for me very uncertain. The suggestion that space and time are not infinite seems at first sight logically evident to me – I have ongoing misgivings about the very notion of infinity – but that existence can suddenly appear *ex nihilo* is also something hard to accept. (The idea of an infinite spiritual being – God - creating a finite material world – the kabbalistic *tsimtsum* theory comes to mind - is of course an attempted compromise between these two positions – though one with its own difficulties.) The newer suggestion that space-time might expand or contract seems conceptually more problematic still (I am not of course ignoring Hubble). Note well that this suggestion is that expansion of the universe (matter, including the space-time between its manifestations) is not expansion into a *preexisting* continuum, but is a deformation of space-time itself, *into nothingness* (as if nothingness is something). Similarly with regard to the reverse, contraction. I do not object to the denial that space and time are empty receptacles, inclining rather to the idea that what we call matter (or indeed mind) is merely the visible disturbances *of* (not in) the fabric of space-time. Neither do I object to space-time being finite. What bugs me is that dilation of the fabric into nothingness signifies a sort of ongoing ex-nihilo coming into existence of (more) space-time. I do not (at least, not yet) see why we do not first try a less radical thesis, that perfectly 'calm' regions of space-time, i.e. regions devoid of material (or mental) activity like stars or galaxies, might exist

These are however much later stages in development of the concepts of space and time, which arose in response to a large array of puzzles in the behavior of objects (e.g. the constancy of the velocity of light) as well as through complex theoretical reflections and calculations. Epistemologically, such further reflections on the possible nature of space and time are clearly highly intellectual and inductive. For most individuals, throughout most of history, advanced notions like Einstein's do not play a role in their concepts of space and time. What matters to everyone are the said basic puzzles, such as that of movement (in response to which the very concepts of perspective and a third dimension and of time and a fourth dimension arise).

Many questions about space and time remain unanswered to date. For instance, the notion that things 'travel in time' (at least in one direction), or the notion that 'time flies,' to which we colloquially refer, is open to debate. As we have seen, the concept of time arises in an effort to understand movement in space (first the perceptible, later any conceptually assumed movement). Would not the idea (by analogy) of movement along a time-line be a doubling of the concept of time, calling perhaps for a further time-like dimension – is this not a redundancy, an unnecessary complication? Bound with this issue is the difficult ontological question as to what might be the meaning of 'ceasing to exist' or 'not yet existing.' Where do past things go when they disappear (do they remain in existence 'somewhere' in the past) and where do future things come from (are they waiting to appear in some repository 'placed' in the future)?

Clearly, until such problems are fully solved, our conceptual constructs of space and time remain scientifically immature. A theory has to always eventually resolve all puzzles, fill in all blank areas, tie up all loose ends – and do so better than any other – before it can be granted as finally trustworthy. Until then, some degree of epistemological doubt has to be maintained. Our concepts of space and time admittedly still need to be fleshed out a lot; but as for their competitiveness, we don't seem to have any ideas to replace the above described basic assumptions. So we may rely on them with some confidence – we don't seem to have much choice, anyway!

> The very latest theoretical discovery of physicists is 'M-Theory', according to which our world involves *ten* dimensions of space and one of time (another theory, given less credence thus far, called F-Theory, proposes to add a second dimension of time to those). It is evident even to an amateur onlooker like me that these ideas (which have developed from String Theories of matter) are immensely interesting and far-reaching, addressing many of the issues just mentioned.

To conclude, though the four dimensions are all called dimensions, they do not arise in knowledge in the same way, they are not all equally empirical and they involve different kinds and varying degrees of rational activity (so that their epistemological status is not identical), and they differ also in their assumed ontological properties (in particular, time is conceived as different from space in various respects). These considerable differences may be glossed-over in some contexts, but should not be completely ignored in any discussion of the four dimensions.

4. Contents of Thought Processes

I wish to now briefly draw your attention to thought in the sense of the stream of verbal and non-verbal discourse in our heads, or in written or oral discussions between us. That is, consider the so-called 'phenomenon' or 'experience' of thought, which is part and parcel of our daily life, and cannot just be ignored as incidental. As is easy to see in the early phases of meditation, thought in one form or another is itself a constant intruder in our life experience. It does not stand aside and let us watch, but functions on and on. It is normally very hard for us to avoid, often grinding on even when we do not want or need it, oblivious to our will. Nevertheless, such involuntary thought may be erratic, and effort may be required for specific directions of thought.

The term 'thought' is pretty vague and used variably. Thinking, in the sense of a process, includes not only words – mentally or physically spoken (or written) verbal sequences, consisting of sounds (or other signs) with meanings, which point our attention to things other than themselves – but also: ongoing current perceptions and

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already on the outskirts of the more active regions (visible to us due to such activity precisely), whether to infinity or with ultimate borders, so that expansion does not involve ex-nihilo becoming. But I admit to being largely ignorant of physics and maths, and so not qualified to judge!

intuitions; occasional plunges into our memory banks; imaginations of things and events; intentions to mean; conceptual and logical insights, conceptualizations; evaluations and emotional responses; intentions to do, acts of will or velleities; imaginations of thoughts, intentions, wills or velleities by oneself or some other(s).
Thought, then, in its minimal form of inner or outer meaningful speech, is to varying degrees an act of will. In its more complex forms, thought involves further acts of will (e.g. if I mentally project or intend the response someone else might have if I hit him). It also involves affections, being usually if not always driven by some desires and/or aversions, which stimulate not only its start, but also its directions and stop.

5. Universals and Potentiality[18]

Speculation is always permissible and valuable, to show we can muster at least one possible scenario, or two or more alternative scenarios. Every theory should be argued for, as well as against, as much as possible.
Whatever it is that particular existents (appearing in experience)[19] have in common, is referred to as a 'universal.' The term is also applied to any common character of such universals, in turn. A number of theories have been proposed to explain what these abstract things we call universals might be. Some accounts were transcendental, some substantial, some mental and some verbal. The issue is very important, because we need to justify our conceptualizations, on which all our knowledge is based.
In my view, the problem of universals should be approached mathematically. According to this theory[20], each universal is *immanent* in the particulars manifesting it, but it has no individual existence of its own anywhere else. Only in our minds is the *separation* between particulars and universals made. We have here a harmonious marriage of Idealism and Materialism.
Imagine all existents, all phenomena be they physical or mental or whatever, as consisting of 'vibrations of energy'[21]. These vibrations of energy are differentiated somehow, in any of various ways waves vary, but they also have common aspects with many though rarely all others. To exist is to be a wave.
All waves co-exist in the concrete world. Furthermore, waves are related abstractly by their similarities, i.e. by the wave characteristics they have in common (except for their space and time coordinates, else they would be one and the same). Everything consists of vibrations, *which affect each other over time*, so that the waves change and move in a multitude of ways.
The result is a network, intense vibrational activity every which way, in constant flux. We perceive existents as they flash before us, by way of the senses, setting our own bodies, brains and souls in vibration (how precisely, has to be looked into). The world as a whole may be viewed as the additive and therefore common resultant of all particular vibrations. The overall noise or music they make, the orchestral symphony of existence.
The tree of classification of all existents that we constantly build up in our minds, judging and memorizing the interrelations between different concepts, has no objective counterpart, but our 'classes' are indeed to be found in the concrete world, in the way of comparable fractions or aspects or measures of vibrations, or of their motions, or of their interrelations.

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18 These notes were originally written in 1997, but I have made considerable changes in them, to bring them up to date with my current thinking.

19 Discourse in terms of Aristotelian categories has proven very confusing and stale, and we have in time come round to the simple and neutral idea of 'events,' when referring to particular existents. For us, anything noticeable, anything that stands out from its surrounds, is an event. (Even the world as a whole is an event, in that it is distinct from an imagined non-world.) Thus, an event may be static or dynamic, a property or an entity, or even a relation (like owning, doing or causing). In Buddhism, the emphasis is rather on 'relation.' The doctrine of interconnectedness of everything suggests that existents (entities, attributes, actions) are merely the crossroads of an infinity of relations, each devoid of substance but all together adding up to something.

20 Discussed more fully in the chapter on Conceptualization.

21 Those of the hippy generation would say, "vibes!" Of course, these ideas come to me from Indian philosophy, by way of its influence on Western youth of my time.

A big question for the theory of universals to answer is the existence of *potentiality*[22]. For our universals are not always actual in a given moment of the world as we experience it. This issue is not unrelated to that of causality, as we shall see.

The universal is generally thought to remain constant while its manifestations in various points of space-time are the particular variations of it that we experience in our journey through space and time. Where is this 'constancy' expressed? It would seem that without actual particular manifestation, the universal does not actually exist. Does it suffice to say that false universals exist in mind instead of matter? But what of the potentiality of a universal that has not yet had a particular, nor been thought about?

> We should in this context mention attempts to solve the problem of potentiality with reference to a multitude (or an infinity) of universes, like ours or unlike ours. This position is found in Buddhism, and has become interesting to scientists in recent years.
>
> According to this view, the world in its largest sense would include multitudes of universes, which like ours constitute momentary, local explosions of manifest turbulent, plural being in the grand fabric of serene monist existence. Or like molecules of water in the ocean.
>
> Such multiple universes might be connected somehow (Einstein speculated on this issue), or totally unconnected. The 'laws of nature' operative in these universes might be wholly or partly the same or different (as Newton speculated).
>
> There might also be universes within universes, related as microcosm and macrocosm. Each quark in our world may be a universe on a smaller scale of space and time, full of black holes, galaxies, stars, planets, living beings, atoms and quarks, with its own Big Bang. Our world may in turn itself be but a quark in a larger universe.
>
> In that case, potentiality (and other modes of possibility) could mean continued existence in another universe of the grand world, while impossibility means nonexistence or cessation of being "in all possible worlds" (a phrase we owe to Liebniz, I think). Whether man can really hope to resolve such issues is questionable. All this is speculation, of course.

A more down to earth answer would be as follows. For a start, the wave-form constituting a 'potential but not actual' universal is a mathematical potential of space-time, *together with all other* 'potential but not actual' universals. That is to say, the potentiality has no specific shape and form stored anywhere specific, but is merely a potentiality inscribed in space-time itself by the very fact of the mathematical possibility of this wave-form and all others in it.

If so, then perhaps everything is potential. Whether the course of the world ever gives rise to all its potentials is then another question. It would at first sight depend only on whether the previous positions of the world process allow for such outcome, given enough time. But if we consider the facts of causation, we see that the situation is more restrictive still.

Not all conceivable wave-forms occur for the simple reason that there are interactions between existing wave-forms. The few fundamental 'laws of physics' are supposed to summarize the given condition of the material world, and predetermine that certain wave-forms that pure mathematics would allow (if antecedents were ignored) will never in fact be actualized. Similarly, supposedly, in the mental domain.

Our knowledge of these 'laws of nature' is not given us in advance, so it has to be based on gradual accumulation of empirical information. Anything is conceivable, but not everything is potential. In most situations, we only know potentiality from actuality, though in some contexts we can predict it from earlier information.

This is where *causation* is sought out: so and so occurs *when* this or that occurs *and only then*. The potential is thus what occurs *in specific circumstances*. Therefore, the actuality wherein potentiality is 'stored' is in the surrounding circumstances, or their antecedents. Potentialities are inscribed in nature's actualities, and passed on from moment to moment, by virtue of the interactions of all waves in the universe.

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22 The other modes of possibility are less of a problem. Thus, logical possibility refers to conceivability (imagination) without internal inconsistency. Extensional possibility implies that cases occur in other specimens of the same class. Whereas natural possibility (potentiality) could be applied to a single individual, that has not previously actually displayed the property in question.

6. Social vs. Personal Knowledge

Each person has knowledge (experiences and insights, as well as introspections) that no one else has. Some of this personal knowledge is verbally shared – i.e. transmitted to others. Much of our individual knowledge comes from other people in this way. We absorb a bit from each of many people (family, friends, neighbors, books, teachers, media, etc.); but not, note well, from all people. Thus, social knowledge is diffuse, more a network of partly overlapping limited circles, than a totality we plug into and feed.

The 'collective ownership' of humanity's knowledge is a theoretical 'potential', rather than an actuality. We do not each have all available knowledge - no one has that: we couldn't in fact ever have it, it is just too vast. Thus, the idea is not just a fiction – it is not even possible.

For these reasons, it is not really accurate to speak of science as a common possession, the sum total of all scientific knowledge. Rather, science is a mutual *process* of communication, data-exchange, and peer acknowledgment or criticism – whose result is broader and more precise, though still limited, knowledge within each of the participants in science.

7. The Active Role of Logic

1. Principles of Adduction[1]

The concepts and processes of adduction are fundamental tools of human cognition, which only started becoming clear in recent centuries thanks to philosophers like Francis Bacon or Karl Popper. Even so, many people are still today not aware of this important branch of logic. Logic is the art and science of discourse. Like all logical principles, those of adduction are firstly idealized descriptions of ordinary thinking, and thereafter prescriptions for scientific thought.

Anything we believe or wonder about or disbelieve may be considered a *theory*. Everything thinkable has some initial credibility at first glance, but we are for this very reason required to further evaluate it, otherwise contradictories would be equally true! ***Adduction*** is the science of such evaluation: it tells us how we do and should add further credibility to a theory or its negation. To adduce evidence is to add logical weight to an idea.

A theory T is said to ***predict*** something P, if T implies P (but does not imply nonP). A theory T may predict the negation of something, i.e. nonP; we might then say that T ***disclaims*** P; in such case, T implies nonP (but does not imply P). A theory T may not-predict P, or not-predict nonP, which are the same situation by our definition (i.e. where T does not imply P *and* does not imply nonP); we might then say that T is ***neutral*** to P (and to nonP).[2]

A theory T has always got at least one alternative nonT, at least to start with[3]. Normally, we do not have only one theory T and its negation nonT to consider, but many theories T1, T2, T3, etc. If any of these alternatives are compatible, they are improperly formulated. Properly formulated alternatives are not merely distinct but incompatible[4]. Let us henceforth suppose we are dealing with such contraries or contradictories, so that the alternatives in the disjunction 'T1 or T2 or T3 or...' are mutually exclusive[5].

Theories depend for their truth on *internal consistency and consistency with all other knowledge, both the theoretical and the empirical*. Here, we are concerned in particular with the estimating the truth, or falsehood, of theories with reference to their predictions or lack of them.

- By ***correct*** (or true) prediction we mean that T predicts P and P indeed occurs, or that T disclaims P and nonP indeed occurs.
- By ***incorrect*** (or false) prediction is meant that T predicts P whereas nonP is found to occur, or that T disclaims P whereas P is found to occur.

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1 This essay was written back in 1990, soon after I completed *Future Logic*, so that I could not include its clarifications in that book. All the other topics in this chapter were developed later, in 1997.

2 A theory that implies *both* P and nonP is inconsistent and therefore false. If that result seems inappropriate, then the claim that T implies P or that T implies nonP or both must be reviewed.

3 This alternative is incompatible with it, i.e. they cannot both be true.

4 For example, 'it is white' and 'it is black' are too vague to be incompatible. We might not realize this immediately, till we remember that some things are both black and white, i.e. partly the one and partly the other. Then we would say more precisely 'it is white and not black' or 'it is wholly black', to facilitate subsequent testing. Of course, our knowledge that some things are both black and white is the product of previous experience; in formulating our theses accordingly, we merely short cut settled issues.

5 The disjunction 'T or nonT' may be viewed as a special case of this. But also, 'T1 or T2 or T3 or...' may always be recast as 'T1 or nonT1', where nonT1 is equivalent to 'T2 or T3 or...'.

Ultimately, occurrences like P or nonP on which we base our judgments have to be mere *phenomena* – things which appear in our experience, simply as they appear[6].

If a theory seems true *at first sight*, it is presumably because its alternative(s) was or were quickly eliminated for some reason – for example, due to inconsistency, or because of obviously untenable predictions. If no alternative was even considered, then the first theory – *and its alternative(s)* – must be subjected to consistency checks and empirical ***tests***. By the latter term we refer to observation (which may be preceded by experiment) of concrete events (and eventually some of their abstract aspects), to settle issues raised by conflicting theories.

It is conceivable that only one theory concerning some issue be at all thinkable; but this situation must not be confused with that of having only succeeded in constructing one theory thus far. For it also happens that we have *no* theory for the issue at hand (at present and perhaps forever), and we do not conclude from this that there is no explanation (we maintain that there is one, in principle). It must likewise be kept in mind that having two or more theories for something does not ensure that we have all the possible explanations. We may later (or never) find some additional alternative(s), which may indeed turn out to be more or the most credible.

Alternative theories may have some predictions in common; indeed they necessarily do (if only in implying existence, consciousness and similar generalities). More significant are the differences between alternative theories: that one predicts what another disclaims, or that one predicts or disclaims what another is neutral to; because it is with reference to such differences, and empirical tests to resolve issues, that we can confirm, undermine, select, reject or establish theories.[7]

If a theory correctly predicts something, which at least one alternative theory was neutral to, then the first theory is somewhat ***confirmed***, i.e. it effectively gains some probability of being true (lost by some less successful alternative theory). If a theory is neutral to something that an alternative theory correctly predicted, then the first theory is somewhat ***undermined***, i.e. it effectively loses some probability of being true (gained by a more successful alternative theory). If all alternative theories equally predict an event or all are equally neutral to it, then each of the theories may be said to be ***unaffected*** by the occurrence.

Thus, confirmation is more than correct prediction and undermining more than neutrality. By our definitions, these terms are only applicable when alternative theories behave differently, i.e. when at least one makes a correct prediction and at least one is neutral to the occurrence concerned. If all alternatives behave uniformly in that respect, they are unaffected by the occurrence, i.e. their probability ratings are unchanged. Thus, confirmation (strengthening) and undermining (weakening) are relative, depending on comparisons and contrasts between theories.[8]

Furthermore, we may refer to degrees of ***probability***, (a) according to which and how many theories are confirmed or undermined with regard to a given occurrence, and (b) according to the number of occurrences that affect our set of theories. If we count one 'point' per such occurrence, then (a) in each event the theory or theories confirmed share the point, i.e. participate in the increased probability, while that or those undermined get nothing; and (b) over many instances, we sum the shares obtained by each of the theories and thus determine their comparative weights (thus far in the research process). The theory with the most accumulated such points is the most probable, and therefore the one to be ***selected***.[9]

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6 Such bare events impinge on our mind all the time. A skilful knower is one who has trained himself or herself to distinguish primary phenomena from later constructs involving them. Sometimes such distinction is only possible ex post facto, after discovery of erroneous consequences of past failures in this art.

7 A prediction is only significant, useful to deciding between theories, if it is, as well as consistent, testable empirically; otherwise, it is just hot air, mere assertion, a cover or embellishment for speculations. The process of testing cannot rest content at some convenient stage, but must perpetually put ideas in question, to ensure ever greater credibility.

8 Note that correct prediction by a theory does not imply proof of the theory (since 'T predicts P' does not imply 'nonT predicts nonP'), nor even exclude correct prediction by the contradictory theory (since 'nonT predicts P' is compatible). It 'confirms' the theory only if the contradictory theory may be 'undermined' (i.e. if 'nonT is neutral to P'), otherwise both the theory and its contradictory are unaffected.

9 The domain of probability rating may be further complicated by reference to different degrees of implication, instead of just to strict implication. T may 'probably imply' P, for instance, and this formal possibility gives rise to further nuances in the computation of probabilities of theories.

Note that it may happen that two alternative theories T and nonT, or a set of theories T1, T2, T3... are in equilibrium, because each theory is variously confirmed by some events and undermined by others, and at the end their accumulated points happen to be equal. This is a commonplace impasse, especially because in practice we rarely do or even can accurately assign and compute probability ratings as above suggested in the way of an ideal model. We end up often relying on ***'judgment calls'***, which people make with varying success. But of course, such decisions are only required when we have to take immediate action; if we are under no pressure, we do not have to make a stand one way or the other.

If any prediction of a theory is incorrect, then the theory is ***rejected***, i.e. to be abandoned and hopefully replaced, by another theory or a modified version of the same (which is, strictly speaking, another theory), as successful in its predictions as the previous yet without the same fault. The expression 'trial and error' refers to this process. Rejection is effective disproof, or as near to it as we can get empirically. It follows that if T incorrectly predicts P, then nonT is effectively proved[10]. So long as a theory seemingly makes no incorrect predictions, it is ***tolerated*** by the empirical evidence as a whole. A tolerated theory is simply not-rejected thus far, and would therefore be variously confirmed, undermined, unaffected.

A theory is finally ***established*** only if it was the only theory with a true prediction while all alternative theories made the very opposite prediction. In short, the established theory had an *exclusive* implication of the events concerned. Clearly, if nonT is rejected, then T is our only remaining choice; similarly, it all alternatives T2, T3... are rejected, then the leftover T1 is established[11]. We may then talk of inductive proof or vindication. Such proof remains convincing only insofar as we presume that our list of alternative theories is complete and their respective relations to their predictions correct, as well as that the test was indeed fully empirical and did not conceal certain untested theoretical assumptions. Proof is deductive only if the theory's contradictory is self-contradictory, i.e. if the theory is self-evident.

Once a theory is selected on the basis of probabilities or established because it is the last to withstand all tests, it retains this favored status until, if ever, the situation changes, i.e. as new evidence appears or is found, or new predictions are made, or new theories are constructed.

It is important to note that, since new theories may enter the discussion late in the day, events which thus far had no effect on the relative probabilities of alternative theories or on a lone standing theory, may with the arrival on the scene of the additional player(s), become significant data. For that reason, in the case of selection, even though correct predictions or neutralities may previously have not resulted in further confirmations or undermining, they may suddenly be of revived interest[12]. Likewise, in the case of establishment, we have to continue keeping track of the theory's correct predictions or neutralities, for they may affect our judgments at a later stage.

Certain apparent deviations from the above principles must be mentioned and clarified:

- Note that well-established (consistent and comparatively often-confirmed) large theories are sometimes treated as 'proofs' for narrower hypotheses. They are thus regarded as equivalent to empirical evidence in their force. This gives the appearance that 'reason' is on a par with experience with respect to evidence – but it is a false impression.

  More specifically: say that (a) I guessed or 'intuited' the measure of so and so to be x, and (b) I calculated same to be x. Both (a) and (b) are 'theories', which can in fact be wrong, yet (a) being an *isolated* theory (or offhand guess) is considered confirmed or rejected by (b), because the latter being *broader in scope* (e.g. a mathematics theorem) would require much more and more complex work to be put in doubt.

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10 Note that if both T and nonT predict P, then P is bound to occur; i.e. if the implications are logically incontrovertible, then P is necessary. If we nonetheless find nonP to occur and thus our predictions false, we are faced with a paradox. To resolve it, we must verify our observation of nonP and our implications of P by both T and nonT. Inevitably, either the observation or one or both implications (or the assumptions that led us to them) will be found erroneous, by the law of non-contradiction.

11 At least temporarily; we may later find reason to eliminate T1, which would mean that our list of theories was not complete and a further alternative Tn must be formulated.

12 Thus correct prediction, though not identical with confirmation, is 'potential' confirmation, etc.

The more complicated the consequences of rejecting an established hypothesis, the more careful we are about doing such a thing, preferring to put the pressure on weaker elements of our knowledge first.

- Note also here the following epistemological fallacy: we often project an image, and then use this *imagined event as an empirical datum*, in support of larger hypotheses. In other words, speculations are layered: some are accepted as primary, and then used to 'justify' more removed, secondary speculations. By being so used repeatedly, the primary speculations are gradually given an appearance of solidity they do not deserve.
  The term 'fact' is often misused or misunderstood. We must distinguish between theory-generated, relative fact and theory-supporting, absolute fact.
  a) 'Facts' may be implied by one's theory, in the sense of being predicted with the expectation that they will be found true, in which event the theory concerned would be buttressed. Such 'facts' are not yet established, or still have a low probability rating. We may call that ***supposed fact***. It is properly speaking an item within one's theory, one claimed to be distinguished by being empirically testable, one that at first glance is no less tentative than the theory that implied it.
  b) In contrast, ***established fact*** refers to propositions that are already a source of credibility for the theory in question, being independently established. The logical relation of implication (theory to fact) is the same, but the role played by the alleged fact is different. Here, a relatively empirical/tested proposition actually adds credibility to a proposed theory.

2. Generalization is Justifiable

The law of generalization is a special case of adductive logic, one much misunderstood and maligned.
In *generalization*, we pass from a particular proposition (such as: *some* X are Y) to a general one (*all* X are Y). The terms involved in such case are already accepted, either because we have observed some instances (i.e. things that are X and things that are Y) or because in some preceding inferences or hypotheses these terms became part of our context. These terms already overlap to at least a partial extent, again either thanks to an observation (that some things are *both* X and Y) or by other means. The generalization proper only concerns the last lap, viz. on the basis that some X are Y, accepting that *all* X are Y. There is no deductive certainty in this process; but it is inductively legitimate.
The general proposition is strictly speaking merely a hypothesis, like any other. It is not forever fixed; we can change our minds and, on the basis of new data (observed or inferred), come to the alternate conclusion that 'some X are not Y' – this would simply be *particularization*. Like any hypothesis, a generalization is subject to the checks and balances provided by the principles of adduction. The only thing that distinguishes this special case from others is that it deals with already granted terms in an already granted particular proposition, whereas adduction more broadly can be used to invent new terms, or to invent particular as well as general propositions. To criticize generalization by giving the impression that it is prejudicial and inflexible is to misrepresent it. We may generalize, provided we remain open-minded enough to particularize should our enlarged database require such correction.
Some criticize generalization because it allows us to make statements about *unobserved* instances. To understand the legitimacy of generalization, one should see that in moving from 'some X are Y' to 'all X are Y' one remains within the *same polarity* of relation (i.e. 'are,' in this case); whereas if one made the opposite assumption, viz. that some of the remaining, unobserved instances of X are *not* (or might not be) Y, one would be introducing a much newer, less justified relation. So far we have only encountered Xs that *are* Y, what justification do we have in supposing that there might be Xs that *are not* Y? The latter is more presumptive than assuming a continued uniformity of behavior.

> Note this argument well. When we generalize from some to all X are Y, we *only* change the quantity involved. Whereas if, given that some X are Y, we supposed that some other X are also Y and some are not Y, we change *both* the quantity and the polarity, for we are not only speculating about the existence of X's that are *not* Y, but also saying something about *all* X (those known to be Y, those speculated to also be Y and those speculated to be not Y). Thus, the preference on principle of particularization to generalization would be a more speculative posture.

Whence, generalization is to be recommended – until and unless we find reason to particularize. Of course, the degree of certainty of such process is proportional to how diligently we have searched for exceptions and not found any.

To those who might retort that an agnostic or problematic position about the unobserved cases would be preferable, we may reply as follows. To say that, is a suggestion that "man is unable to know generalities." But such a statement would be self-contradictory, since it is itself a claim to generality. How do these critics claim to have acquired knowledge of this very generality? Do they claim special privileges or powers for themselves? It logically follows that they implicitly admit that man (or some humans, themselves at least) can know some generalities, if only this one (that 'man can know some generalities'). Only this position is self-consistent, note well! If we admit some generality possible (in this case, generality known by the logic of paradoxes), then we can more readily in principle admit more of it (namely, by generalization), provided high standards of logic are maintained.

Moreover, if we admit that *quantitative* generalization is justifiable, we must admit in principle that *modal* generalization is so too, because they are exactly the same process used in slightly different contexts. Quantitative generalization is what we have just seen, the move from 'some X are Y' to 'all X are Y,' i.e. from some instances of the subject X (having the predicate Y) to all instances of it. Modal generalization is the move from '(some or all) X are in *some* circumstances Y' to '(some or all) X are in *all* circumstances Y,' i.e. from some circumstances in which the XY conjunction appears (potentiality) to all eventual surrounding circumstances (natural necessity). It is no different a process, save that the focus of attention is the frequency of circumstances instead of instances. We cannot argue against natural necessity, as David Hume tried, without arguing against generality. Such a skeptical position is in either case self-defeating, being itself a claim to general and necessary knowledge!

> Note that the *arguments* proposed above in favor of the law of generalization are consistent with that law, but not to be viewed as an application of it. They are logical insights, proceeding from the forms taken by human thought. That is to say, while we induce the fact that conceptual knowledge consists of propositional forms with various characteristics (subject, copula, predicate; polarity, quantity, modality; categorical, conditional), the analysis of the implications on reasoning of such forms is a more deductive logical act.

Thus, generalization in all its forms, properly conceived and practiced, i.e. including particularization where appropriate, is fully justified as an inductive tool. It is one instrument in the arsenal of human cognition, a very widely used and essential one. Its validity in principle is undeniable, as our above arguments show.

3. Logical Attitudes

Logic is usually presented for study as a static description and prescription of forms of proposition and arguments, so that we forget that it is essentially an *activity*, a psychic act. Even the three Laws of Thought have to be looked at in this perspective, to be fully understood. To each one of them, there corresponds a certain mental attitude, policy or process…

a) To the Law of Identity, corresponds the attitude of **acknowledgement of fact**, i.e. of whatever happens to be fact in the given context. Here, the term 'fact' is meant broadly to include the fact of appearance, the fact of reality or illusion, or even the fact of ignorance or uncertainty. Also, the attention to eventual conflicts (contradictions, incompatibilities, paradoxes, tensions) and gaps (questions, mysteries); and by extension, other forms of oppositional relations.
b) To the Law of Non-contradiction, corresponds the policy of **rejection of contradictions**. Contradictions occur in our knowledge through errors of processing of some kind (e.g. over-generalization, uncontrolled adduction, unsuccessful guessing), which is ultimately due to the gradual presentation of information to the human observer and to his limited, inductive cognitive means. The Law is an insight that such occurrence, once clearly realized, is to be regarded not as a confirmation that contradiction can occur in reality, but as a signal that a mere illusion is taking place that must be rejected.
c) To the Law of the Excluded Middle, corresponds the process of **searching for gaps or conflicts in knowledge and pursuing their resolution**. This is the most dynamic cognitive activity, an important engine

in the development of knowledge. And when a contradiction or even an uncertainty arises, it is this impulse of the human thinking apparatus that acts to ask and answer the implicit questions, so as to maintain a healthy harmony in one's knowledge.

Thus, the exercise of logic depends very much on the ***human will***, to adopt an attitude of factualism and resolve to check for consistency, look for further information and issues, and correct any errors found. The psychological result of such positive practices, coupled with opportunity and creativity, is increasing knowledge and clarity. The contraries of the above are avoidance or evasion of fact, acceptance of contradictions, and stupidity and laziness. The overall result of such illogical practices is ignorance and confusion.

Whereas 'consciousness' refers to the essentially static manifestation of a Subject-Object relation, 'thought' is an activity with an aim (knowledge and decision-making). The responsibility of the thinker for his thought processes exists not only at the fundamental level of the three Laws, but at every level of detail, in every cognitive act. Reasoning is never mechanical. To see what goes on around us, we must turn our heads and focus our eyes. To form a concept or formulate a proposition or construct an argument or make an experiment or test a hypothesis, we have to make an effort. The more attentive and careful our cognitive efforts, the more successful they are likely to be.

4. Syllogism Adds to Knowledge

People generally associate logic with deduction, due perhaps to the historic weight of Aristotelian logic. But closer scrutiny shows that human discourse is largely inductive, with deduction as but one tool among others in the toolbox, albeit an essential one. This is evident even in the case of Aristotelian syllogism.

A classic criticism of syllogistic logic (by J. S. Mill and others) is that it is essentially circular argument, which adds nothing to knowledge, since (in the first figure) the conclusion is already presumed in the major premise. For example:

All men are mortal	(major premise)
Caius is a man	(minor premise)
therefore, Caius is mortal	(conclusion)

But this criticism paints a misleading picture of the role of the argument, due to the erroneous belief that universal propositions are based on "complete enumeration" of cases[13]. Let us consider each of the three propositions in it.

Now, our major premise, being a universal proposition, may be either:

(a) axiomatic, in the sense of self-evident proposition (one whose contradictory is self-contradictory, i.e. paradoxical), or
(b) inductive, in the way of a generalization from particular observations or a hypothesis selected by adduction, or
(c) deductive, in the sense of inferred by eduction or syllogism from one of the preceding.

If our major premise is (a), it is obviously not inferred from the minor premise or the conclusion. If (b), it is at best probable, and that probability could only be incrementally improved by the minor premise or conclusion. And if it is (c), its reliability depends on the probability of the premises in the preceding argument, which will reclassify it as (a) or (b).

Our minor premise, being a singular (or particular) proposition, may be either:

(a) purely empirical, in the sense of evident by mere observation (such propositions have to underlie knowledge), or

13 In a way Aristotle brought this criticism upon himself, since he first apparently suggested that universal propositions are based on complete enumeration. But of course, in practice we almost never (except in very artificial situations where we ourselves conventionally define a group as complete) encounter completely enumerable groups. Our concepts are normally open-ended, with a potentially "infinite" population that we can never even in theory hope to come across (since some of it may be in the past or future, or in some other solar system or galaxy)!

(b) inductive, i.e. involving not only observations but a more or less conscious complex of judgments that include some generalization and adduction, or
(c) deductive, being inferred by eduction or syllogism from one of the preceding.

If our minor premise is (a), it is obviously not inferred from any other proposition. If (b), it is at best probable, and that probability could only be incrementally improved by the conclusion. And if it is (c), its reliability depends on the probability of the premises in the preceding argument, which will reclassify it as (a) or (b).

It follows from this analysis that the putative conclusion was derived from the premises and was not used in constructing them. In case (a), the conclusion is as certain as the premises. In case (b), the putative conclusion may be viewed as a **prediction** derived from the inductions involved in the premises. The conclusion is in neither case the basis of either premise, contrary to the said critics. The premises were known temporally before the conclusion was known.

The deductive aspect of the argument is that granting the premises, the conclusion would follow. But the inductive aspect is that the conclusion is no more probable than the premises. Since the premises are inductive, the conclusion is so too, even though their relationship is deductive. The purpose of the argument is not to repeat information in the premises, but to verify that the premises are not too broad. The conclusion will be tested empirically; if it is confirmed, it will strengthen the premises, broaden their empirical basis; if it is rejected, it will cause rejection of one or both premise(s).

> In our example, *conveniently, Caius couldn't be proved to be mortal, although apparently human, till he was dead. While he was alive, therefore, the generalization in the major premise couldn't be based on Caius' mortality. Rather, we could assume Caius mortal (with some probability – a high one in this instance) due to the credibility of the premises. When, finally, Caius died and was seen to die, he joined the ranks of people adductively confirming the major premise. He passed from the status of reasoned case to that of empirical case.*

Thus, the said modern criticism of syllogism (and by extension, other forms of "deductive" argument) is not justified. Syllogism is a deductive procedure all right, but it is usually used in the service of inductive activities. Without our ability to establish deductive relations between propositions, our inductive capabilities would be much reduced. All pursuit of knowledge is induction; deduction is one link in the chain of the inductive process.

It should be noted that in addition to the above-mentioned processes involved in syllogism, we have to take into account yet deeper processes that are tacitly assumed in such argumentation. For instance, terms imply classification, which implies comparison, which mostly includes a problematic reliance on memory (insofar as past and present cases are compared), as well as perceptual and conceptual powers, and which ontologically raises the issue of universals. Or again, prediction often refers to future cases, and this raises philosophical questions, like the nature of time.

The approach adopted above may be categorized as more epistemological than purely logical. It was not sufficiently stressed in my *Future Logic*.

5. There is a Formal Logic of Change

In an article in the December 1997 issue of Network[14], "Goethe's Organic Vision", Bortoft[15] exposes the limitation of modern scientific thinking to static relations, and how it could have been avoided had we paid more attention to Goethe's[16] more dynamic way of looking at things.

Bortoft argues, in effect, that when science adopted its mathematical approach to the description of nature, as of the 18th Century under Neoplatonistic influences, in its enthusiasm it missed out on a valuable epistemological opportunity which Goethe had presented it.

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14 My present comments were written in 1998.
15 Author of The Wholeness of Nature; Goethe's Way of Science (Floris Press, 1996).
16 Johannn Wolfgang von Goethe (Germany, 1749-1832).

The latter, in his *The Metamorphosis of Plants*, considers that "it may be possible out of one form to develop all plant forms". Bortoft explains that this was not meant to be interpreted, as it has been by many, as a search for the commonalties of plant organs (and plants) – but rather, as Rudolph Steiner[17] had done, as an attempt to capture a supposed biological transformation of some original unitary organ (or plant) into a multiplicity of organs (or plants).

That is, Goethe was not referring to Platonic universals concerning a 'finished product', but to a living process. He was looking for the multiplicity 'emerging from an original unity', rather than for an 'unity underlying multiplicity'.

I want to here let it be known that *the linguistic/logical tools needed to implement Goethe's programme already exist*. Propositional forms through which to verbally express change (including metamorphosis), and the deductive logic (oppositions, syllogism, etc.) concerning such forms, have already been worked out in considerable detail in my work *Future Logic*[18].

Aristotle had, in his treatises on logic, crystallized and surpassed the work of his predecessors, and in particular that of his teacher Plato, by formalizing the language of classification and the reasoning processes attending it.

The common characters (including behaviors[19]) of things were expressed as predicates of subjects, in categorical propositions of the form "X is Y" (where X, Y... stood for universals). The relation expressed by the copula 'is' was clarified in the various deductive processes, and in particular by syllogism such as "if X is Y and Y is Z, then X is Z". This is all well known, no need for more detail.

While Aristotle limited his formal treatment to such static relations, essentially the relations between particulars, species and genera, he did in his other works investigate **change** informally in great detail. He was bound to do so, in view of the interest the issues surrounding it had aroused in Greek philosophy since its beginnings. His approach to change was, by the way, distinguished by his special interest in biology.

What concerns us here is the distinction between **being and becoming**, which Aristotle so ably discussed.

In "X is Y", a thing which is X is also Y – it has both characters at once, in a static relation expressed by the copula of being (is). In contrast, in "X becomes Y", the particular in question is at first X and at last Y, *but not both at once*; it ceases being X and comes to be Y, it undergoes change – the copula of becoming expresses a dynamic relation.

The latter copula can easily be subjected to the same kind of logical analysis as was done for the simpler case. The formal treatment in question may be found, as I said, in my above-mentioned work[20]. What I want to stress here is the significance of the introduction of propositions concerning change into formal logic.

Our philosophical view of classification has been distorted simply because Aristotle stopped his logical investigations where he did. Perhaps given more time he would have pursued his research and extended our vision beyond the statics of classification into its dynamics.

For, finally, it is very obvious that ***things do not just fall under classes once and forever, but they also pass over from one class to another***.

And this is true not just in biology, but in all fields. The baby I was once became an older man. The water used in the hydrolytic process became hydrogen and oxygen. Logicians have no need to invent a special language, and there is nothing artificial in considering changes in subsumption. We all, laymen and scientists, speak the language already and reason with it all the time.

No change of paradigm is called for, no metaphysical complexities, note well. The only problem is that philosophers have lagged behind in their awareness of the phenomenon. Nothing said here invalidates the static approach; we merely have to enrich it with awareness of the dynamic side.

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17 In Goethe's World View (1897).

18 See especially chapter 17.

19 That is, an action or activity can be counted as a quality in this context; e.g. footballers.

20 There I also deal with other forms of change. 'Becoming' refers to *mutation* (or metamorphosis or radical change), but we must also consider *alteration* (or superficial change), for which I use the expression 'getting to be' as copula, note. (I saw the elucidation of this language and area of logic as essential to discourse in evolutionary theory, for instance.)

Let me add, in conclusion, that Bortoft's article has made me realize that the subject term (X) of "X becomes Y" may be seen as a *sort of* 'genus' in relation to the predicate term (Y)[21]. For, in addition to reawakening us to the dynamic aspects of our world, Goethe is pointing out[22] that the root form, the common historical source of present forms, has a unifying effect, distinct from that of mere similarities in present characteristics.

Upon reflection we see that here it is not "X" per se which is a genus, but the derivative term "*came out of* X" which is obviously different in its logical properties. After an X becomes a Y, we can classify that Y under the heading of things that came out of an X (though not under things X). The closer study of this more complex predicate, involving *both tense and course of change*, would constitute an enlargement of class logic.

For evidently, a broad consideration of class logic has to recognize a distinct existence and identity to terms which are not only present and attributive (is X), but past (was X) or future (will be X) in the mutative (came out of X, will come out of X) or alterative (got to be out of X, will get to be out of X) senses. For each of these terms is legitimate (and oft-used in practice) and sure to have its own behavior patterns[23].

The scope of class logic studies has so far been limited so as to simplify the problem; but once the simpler cases are dealt with, we are obliged to dig deeper and try and give an account of all forms of human reasoning.

6. Concept Formation

Many philosophers give the impression that a concept is formed simply by pronouncing a clear definition and then considering what referents it applies to. This belief gives rise to misleading doctrines, like Kant's idea that definitions are arbitrary and tautologous. For this reason, it is important to understand more fully how concepts arise in practice[24]. There are in fact two ways concepts are formed:

a) **Deductive concepts**. Some concepts indeed start with reference to a selected attribute found to occur in some things (or invented, by mental conjunction of separately experienced attributes). The attribute defines the concept once and for all, after which we look around and verify what things it applies to (if any, in the case of inventions) and what things lack it. Such concepts might be labeled 'deductive', in that their definition is fixed. Of course, insofar as such concepts depend on experiential input (observation of an attribute, or of the attributes imagined conjoined), they are not purely deductive.

   Note in passing the distinction between deductive concepts based on some *observed* attribute(s), and those based on an *imagined* conjunction of observed attributes. The former necessarily have some real referents, whereas the latter may or not have referents. The imagined definition may turn out by observation or experiment to have been a good prediction; or nothing may ever be found that matches what it projects. Such fictions may of course have from the start been intended for fun, without expectation of concretization; but sometimes we do seriously look for corresponding entities (e.g. an elementary particle).

b) **Inductive concepts**. But there are other sorts of concepts, which develop more gradually and by insight. We observe a group of things that *seem* to have *something* in common, we know not immediately quite *what*. We first label the group of things with a distinct name, thus *conventionally* binding them together for further consideration. This name has certain referents, more or less recognizable by insight, but not yet a definition! Secondly, we look for the common attribute(s) that may be used as definition, so as to bind the referents

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21 Note well this reverses the roles in "X is Y", where Y is usually seen as a genus of X (if all X are Y, to be more precise).

22 It is irrelevant how far today's biologists agree with Goethe's specific thesis; we are merely concerned with the philosophical aspects here.

23 Certainly, a member of "now X" is not necessarily a member of "previously X" or of "subsequently X", all the more so if we consider the different kinds of change which may underlie the qualifications 'previously' or 'subsequently'. Such study ought, perhaps, start by considering the converse issue -- the logical properties of the tenses of mutation (became, will become Y) and alteration (got to be, will get to be Y).

24 See also my *Future Logic*, chapter 4.4, and other comments on this topic scattered in my works. The present comments were written in 2002, so as to clarify the next section, about empty classes. The ultimate null class is, of course, 'non-existence'!

together in our minds in a *factual* (not conventional, but natural) way. The latter is a trial and error, inductive process.

We begin it by more closely observing the specimens under consideration, in a bid to discern some of their attributes. One of these attributes, or a set of them, may then stand out as common to all the specimens, and be proposed as the group's definition. Later, this assumption may be found false, when a previously unnoticed specimen is taken into consideration, which intuitively fits into the group, but does not have the attribute(s) required to fit into the postulated definition. This may go on and on for quite a while, until we manage to pinpoint the precise attribute or cluster of attributes that can fulfill the role of definition.

I would say that the majority of concepts are inductive, rather that deductive. That is, they do not begin with a clear and fixed definition, but start with a vague notion and gradually tend towards a clearer concept. It is important for philosophers and logicians to remember this fact.

7. Empty Classes

The concept of empty or null classes is very much a logical positivist construct. According to that school, you but have to 'define' a class, and you can leave to later determination the issue as to whether it has referents or is 'null'. The conceptual vector is divorced from the empirical vector.

What happens in practice is that an imaginary entity (or a complex of experience, logical insight and imagination) is classified without due notice of its imaginary aspect(s). A budding concept is prematurely packaged, one could say, or inadequately labeled. Had we paid a little more attention or made a few extra efforts of verification, we would have quickly noted the inadequacies or difficulties in the concept. We would not have 'defined' the concept so easily and clumsily in the first place, and thus not found it to be a 'null class'.

One ought not, or as little as possible, build up one's knowledge by the postulation of fanciful classes, to be later found 'empty' of referents. One should rather seek to examine one's concepts carefully from the start. Though of course in practice the task is rather to reexamine seemingly cut-and-dried concepts.

I am not saying that we do not have null classes in our cognitive processes. Quite the contrary, we have throughout history produced classes of imaginary entities later recognized as non-existent. Take 'Pegasus' – I presume some of the people who imagined this entity believed it existed or perhaps children do for a while. They had an image of a horse with wings, but eventually found it to be a myth.

However, as a myth, it survives, as a receptacle for thousands of symbolizations or playful associations, which perhaps have a function in the life of the mind. It is thus very difficult to call 'Pegasus' a null-class. Strictly speaking, it is, since there were never 'flying horses'. But in another sense, as the recipient of every time the word Pegasus is used, or the image of a flying horse is mentally referred to, it is not an empty class. It is full of incidental 'entities', which are not flying horses but have to do with the names or images of the flying horse – events of consciousness which are rather grouped by a common symbol.

Mythical concepts in this sense are discussed by Michel Foucault in his *Order of Things*.

We can further buttress the non-emptiness of imaginary concepts by reminding ourselves that today's imaginations may tomorrow turn out to have been realistic. Or getting more philosophical we can still today imagine a scenario for ourselves, consistent with all experience and logical checks, in which 'Pegasus' has a place as a 'real' entity, or a concept with real referents. Perhaps one day, as a result of genetic manipulations.

> Another example interesting to note is that of a born-blind person, who supposedly lacks even imaginary experience of sights, talking of shape or color. Such words are, for that person, purely null-classes, since not based on any idea, inner any more than outer, as to what they are intended to refer to, but on mere hearsay and mimicry. Here again, some surgical operation might conceivably give that person sight, at which time the words would acquire meaning.

But of course, there are many concepts in our minds, at all times, which are bound to be out of phase with the world around since we are cognitively limited anyway. It follows that the distinction here suggested, between direct reference and indirect (symbolic – verbal or pictorial) reference, must be viewed as having gradations, with seemingly direct or seemingly indirect in-betweens.

Furthermore, we can give the cognitive advice that one should avoid conceptualization practices that unnecessarily multiply null-classes (a sort of corollary of Ockham's Razor). Before 'defining' some new class, do a little research and reflection, it is a more efficient approach in the long run.

One should also endeavor to distinguish between **'realistic' concepts** and **'imaginary' concepts**, whenever possible, so that though the latter be null classes strictly speaking, their mentally subsisting elements, the indirect references, may be registered in a fitting manner. Of course, realistic concepts may later be found imaginary and vice-versa; we must remain supple in such categorizations.

Imaginary concepts are distinguished as complexes involving not only perception and conception, but also *creativity*. The precise role of the latter faculty must be kept in mind. We must estimate the varying part played by projection in each concept over time. This, of course, is nothing new to logic, but a restatement for this particular context of something well known in general.

8. Context[25]

We may here refer to as a 'text' any word, phrase, sentence or collection of sentences, or indeed any meaningful symbol (such as a traffic sign or a Chinese character[26]). A text may be explicit in thought, speech or writing; or it may be implicit, yet to be made explicit. When two or more texts come together in a body of knowledge, or in a selected framework under consideration, they form a combined text, and each text is said to be taken 'in the context of' the other text(s) present or under consideration. Note also: If a text logically implies some other text or parts of a text, the latter text or parts is/are called a 'subtext' of the former.

Each text taken alone carries with it a certain range of meaning or semantic charge, which is all the possible intentions or interpretations inherent in it, with reference to all possible contexts. This is of course a theoretical notion, since we are never omniscient: it is an open-ended concept; as our knowledge develops, more and more of these possible meanings come to light. Nonetheless, we can represent this eventual totality as a circle for the sake of argument. Thus, contextuality can to some extent be illustrated as the *intersection* between two (or more) such circles of meaning, as in **Figure 5**.

Obviously, the texts must be compatible, to give rise to a combined text[27]. As this diagram makes clear, the intersection of texts may not give rise to just one joint meaning (a point); it may well give rise to a range of meanings (an area, though one smaller than the original areas). The meaning(s) that they share is/are their compatibility, and the areas outside their intersection are their distinctions and incompatibilities. Note that some, perhaps most, of the "meanings" under consideration are bound to be experiential (actual or at least potential experiences): they are far from entirely conceptual.

But, the essence of contextuality is *the mutual impact* that combined texts have on each other. When two texts intertwine, if the meaning of neither of them is apparently affected by the presence of the other text, they cannot be regarded as constituting a context for each other. ***Contextuality is joint causation by the combination of texts of some new, or more specific, meaning*.** The combined text has a semantic charge somewhat different from the separate texts that constitute it. Either some "new" meaning is caused to appear for us by such fusion (i.e. though it was in the theoretical semantic charge, we were not yet made aware of it in actuality); or though the meaning was foreseen as potential, the fusion of texts has narrowed down the scope of possibilities and so brought that meaning to the fore or into sharper focus.

> A one-word text has a broad range of potential meanings (all its eventual denotations and connotations, now known or not yet known). When you combine it with other words, in a phrase or sentence, you

25 See also *Future Logic*, chapter 22.

26 In contrast to the letters of an alphabet, which are intended as semantically empty.

27 When two texts are incompatible, and it is not clear which of the two is to be abandoned, they remain in knowledge "temporarily" as an unsolved problem (i.e. both become problematic to a greater degree than previously). When one text is preferred to the other, for whatever reasons, clearly the negation of the latter becomes a context for the former, as do the reasons for the preference.

inevitably fine-tune its range of meanings, since only its occurrences in such conjunction are henceforth under consideration. But if you had not till now been aware that this word was combinable with those others, the moment of discovery was an enrichment of meaning for that word, as far as you are concerned.

The fine-tuning aspect may be viewed as "deductive"; the enriching aspect may be viewed as "inductive".

In this way, bringing texts together in thought or common discourse serves to naturally enlighten us as to their meanings, to increase our understanding or the precision of our insights. This is no mystical event, but is a natural consequence of logic, an operation of the reasoning faculty. And by logic, here, understand inductive as well as deductive logic. After all, what is the whole thrust of this science – its analysis of the forms (categorical, conditional, etc.) and processes (oppositions, eductions, syllogisms, adductions) – but to evaluate once and for all the effect of terms and propositions on each other.

A formal example is syllogism. The premises are two texts, say "X is Y" and "Y is Z", and the conclusion "X is Z" is the context, i.e. the common ground (or part of it) of meaning in them. Each text in isolation includes this proposition (X is Z) and possibly its opposite. But when the two are brought together, this meaning (X is Z) in them is selected.

Of course, some mystery remains. We may well wonder at the ultimate universality of logical insight. Contrary to the beliefs of certain naïve logicians, it is not by means of conventions that reason keeps us in sane contact with experience. It is rather a sort of orderliness, by careful attention to the laws of thought. It is an ethical choice and habit, not a compulsion. Many people fail in this duty of sanity much of the time, and most people do so some of the time (hurting themselves and others).

9. Communication

Logic and language are used primarily for individual thought, and only thereafter for communication between individuals and in groups. Some logicians and linguists seem to forget that, and stress their social aspect, considering the facts of biological evolution. There is no denying that the physiological organs that make human speech possible had to evolve before language could occur. It is also doubtless that the existence of social groups with common experiences and survival goals greatly stimulated the development of verbal discourse. Nevertheless, it is logically unthinkable that any social communication occur without there being first an equivalent movement of thought within the individual mind.

Moreover (as I explain earlier, in chapter 3.2), before verbal thought or dialogue there has to be intention. Words are phenomenal, first occurring in the way of sounds and images in the mind, whether they are taught by society or personally invented. Preverbal thought is intuitive: it is the self-knowledge of what experiences or abstractions we personally intend to refer to or understand by the words used or encountered. Before a logical insight is put into words, it occurs silently and invisibly, as something introspectively evident. To grasp the meanings we attach to words, we range far and wide in our present and past experiences and reasoning. All the factors thus scanned, which effectively contribute to the meaning of a text, are its 'context' for the individual concerned.

With regard to communication between people (or even with animals), additional factors must be taken into consideration. First, we have to note the empirical facts that, to all appearance, communication is sometimes successful and sometimes not. Both these facts are significant.

Secondly, successful communication may seemingly be nonverbal as well as verbal. Some nonverbal discourse occurs in the way of facial expressions, bodily gestures, tonalities of voice, etc. – this is still phenomenal, indeed material, communication, which largely relies on the common behavior patterns of individuals, and in particular the similarity of their emotional reactions. If I shout angrily or wail despairingly, you recognize the sounds as similar to those you emit when you have these emotions, and you assume I am having the same emotions (or occasionally, pretending to have them).

There may also exist nonverbal communication based on telepathy, i.e. apparently on a non-material vehicle, though possibly through some material field (e.g. electromagnetic waves). Thoughts might alternatively be transported in some shared mental domain; or telepathy might even be non-phenomenal, based on possibility of intuition into other people's souls as well as our own. I tend to believe in telepathy

(however its means), but readily admit that such a conjecture is not currently scientifically detected and justified. It is mentioned here in passing.

With regard to verbal communication between two (or more) players, the following is worth mentioning. It may be oral (speech) or visual (writing, alphabetical or using other symbols). In the case of speech, the emitter is a speaker and the receiver is an auditor. In the case of writing, we have a writer and a reader. There are different (variously related) languages, and even the same language is not necessarily fully shared. Obviously, both the players must have (part of) a language in common for verbal communication to at all occur.

Inevitably, two people who share the same text do not have exactly the same context for it. They may have both had a certain experience, but their perspectives and memories of it are likely to differ. They may both know and use a word or concept, but it means somewhat different things to them. They may agree on certain beliefs or principles, but understand them variously. For example, the word "logic" means different things to two logicians, and all the more so to a logician and a layperson. Or again, a scientist's idea of "intellectual honesty" and that of a journalist are very different.

This brings us, thirdly, to the complexities of communication: the difficulty of transmitting what one intends to mean and that of interpreting what was meant. The one making a statement (call him or her A) may wish to reveal something and/or to conceal something; the intent may be sincere and transparent, or manipulative and distortive. The one interpreting the statement (call him or her B) must, as well as understanding its content at face value, critically evaluate its honesty or dishonesty. For both parties, both deductive and inductive aspects are involved.

A may call upon B to remember certain common experiences or to believe some reported experiences, to form certain concepts and propositions from them, and to draw certain deductive and inductive inferences from them. To achieve this end, A must guess what B knows or does not know, and how intelligent he or she is, and tailor the statement accordingly.

> For example, a teacher may want to ensure the transmission of knowledge by adding more information or explanation, giving students sufficient indices so that there will be no misunderstanding. Or for example, a biased TV news team may slant a "report" by filming or showing only certain aspects of an event, and they may air with it comments that are either explicitly tendentious or that serve their aims through a cunning choice of words and tone of voice, or they may simply add background music that produces the desired emotional reaction of sympathy or rejection.

On the other side, B has to guess, or more or less systematically estimate, what A intended by the statement made, and how reliable a witness A is. This may involve looking into one's memory banks for matching or conflicting personal experiences, researching in other sources (looking in a dictionary, the public library or the Internet, or interviewing people around one), thinking for oneself, spotting contradictions, using syllogisms, trying and testing different hypotheses, and so forth. This sort of inner discourse goes on usually unconsciously all day long when we are dealing with people, trying to understand their words and deeds.

8. Epistemological Issues in Mathematics

The following are a few reflections on the Philosophy of Mathematics, which I venture to offer although not a mathematician, having over time encountered[1] treatments of issues that as a philosopher and logician I found questionable. The assault on reason throughout the 20th Century has also had its effects on the way philosophers of mathematics understood the developments in that subject. Having a different epistemological background, I can propose alternative viewpoints on certain topics, even while admitting great gaps in my knowledge of mathematics.

1. Mathematics and Logic

Attending lectures on the work of Jean Piaget, I was struck by the confusion between logic and mathematics in his identification of learning processes. Some that I would label as mathematical, he labeled as logical; and vice versa. This is of course due to the blurring of the distinction found in a lot of modern logic. There are two aspects to this issue, according to the direction of viewing.

a) **Mathematics is used in logic**. Mathematics, here, refers mainly to arithmetic and geometry; for instances, in considerations of quantity (or more broadly, modality) in the structure of propositions or within syllogistic or a fortiori arguments.
b) **Logic is used in mathematics**. Logic is here intended in a broad sense, including the art (individual insights) and the science (concepts, forms and process) of logic; for instance, logic is used to formulate conditions and consequences of mathematical operations.

For example, the statement "IF there are 100 X at time t1 AND there are 150 X at time t2, THEN the rate of change in number of X was (150 – 100)/(t2 – t1) per unit time." Here mathematical concepts (the numbers 100, 150, t1 and t2) are embedded in the antecedent (if) of a hypothetical proposition (implication), and additionally a formula (viz. (150 – 100)/(t2 – t1)) for calculating a new quantity is embedded in the consequent (then), derived from the given quantities.

The *logical* part of that statement here is the "if-then-" statement. What makes it logical is that it is a form not limited to mathematics, but which recurs in other fields of knowledge (physics, psychology, whatever). It is a thought process (the act of understanding and forming a proposition) with wider applicability than mathematical contexts; it is more general.

The *mathematical* part of said statement is the listed numerical concepts involved and the calculation based on them – the operations involved (in the present case, two subtractions and a division. The insight that the proposed formula indeed results in the desired knowledge (the resulting quantity) belongs to mathematics. Logic here only serves to conceptually/verbally express a certain relation (the implication) established by mathematical reasoning.

We should also note the mathematical elements found in defining the "if-then-" form – notably appeal to a geometrical example or analogy of overlapping circles (Euler or Venn diagrams). Nevertheless, there clearly remains in such forms a purely logical, in the sense of non-mathematical, element; such explanations cannot fully express their meaning. The quantitative part is merely the visible tip of the iceberg of meaning; the qualitative – more broadly conceptual – part is a more difficult to verbalize and so relatively ignored aspect.

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1 Notably in 1998, when I attended certain courses at Geneva University, such as lectures (I forget by whom) on the work of Jean Piaget and others given by Prof. J.-C. Pont on the History of Mathematics. Many (but not all) of the notes in this essay date from those encounters.

Of course, we can also say that in the largest sense of the term logic – discourse, thought process – even mathematical reasoning is logic. The division is ultimately artificial and redundant. Nevertheless, these subjects have evolved somewhat separately, with specialists in mathematics and specialists in more general (or the rest of) logic. It is also probable, judging by the work of Jean Piaget and successors in child learning processes, that different logical or mathematical concepts and processes are learned at different ages/periods of early childhood, and there are variations in temporal order from one child to another.

Historically, it is a fact that we have adopted the separation of these investigations and a division of labor, so that logic and mathematics have been considered distinct subjects of study. Of course, there has been much communication and intertwining between these two fields, and indeed attempts at merger. Here, I merely want to indicate where the boundaries of the distinction might lie. Specifically quantitative concepts and operations are mathematics; whereas logic deals with thought processes found in other fields besides. In this view, mathematics is quantitative discourse, whereas logic is (also) non-quantitative discourse.

By making such fine distinctions, we can for instance hope to better study human mental development.

2. Geometrical Concepts have an Experiential Basis

The idea that mathematical systems such as Hilbert's[2] are "axiomatic" – that is, pure of any dependence on experience is a recurring myth, which is based on an erroneous view of how knowledge of this field has developed. I have discussed the source of this fallacy at length in my *Future Logic* (see chapter 64, among others); here I wish to make some additional, more specific remarks.

I do not deny that Hilbert's postulates are mutually consistent and by themselves sufficient to develop geometrical science. My objection is simply to the pretentious claim that his words and propositions are devoid of reference to experience. We need only indicate the use of logical expressions like "exists," "belonging," "including," "if – then –," etc., or mathematical ones like "two," "points" "line," etc., to see the dependence.

Take for example the concept of a group (to which something "belongs" or in which something is "included"). The concept is not a disembodied abstract, but has a history within knowledge. The idea of grouping is perhaps derived from the practice of herding animals into an enclosure or some such concrete activity. The animals could all be cows – but might well be cows mixed with goats and sheep. So membership in the group (presence in the enclosure) does not necessarily imply a certain uniformity (a class, based on distinctive similarity – e.g. cows), but may be arbitrary (all kinds of animals, say). Thus, incidentally, the word group has a wider, less specific connotation than the word class (which involves comparison and contrast work). Without such a physical example or mental image of concrete grouping, the word would have no meaning to us at all. So, genetically, the word grouping – and derived expressions like belonging or including, etc. – presupposes a *geometrical* experience of some sort (a herding enclosure or whatever). We cannot thereafter, after thousands of years of history of development of the science of geometry, claim that the word has meaning without reference to experience. Such a claim is guilty of forgetfulness, and to claim that geometry can be built up from it is circular reasoning and concept-stealing.

It would be impossible for us to follow Hilbert's presentation without bringing to mind visual images of points, successions of points, lines crisscrossing each other, this or that side of a line, etc. Those images at least are themselves mental objects in internal space, if not also end products of our past experiences of physical objects in external space. The value and justification of Hilbert's work (and similar attempts, like Euclid's) is not that is liberates geometry from concrete experiences of objects in space, but merely that it logically orders geometrical propositions so that they are placed in order of dependence ***on each other*** (from the least to the most).[3]

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2 I write this looking at a university handout listing the "axioms (or plan) of Hilbert's system", in four groups (belonging, order, congruence and parallels). I was struck with the numerous appeals to "stolen concepts" in it (see *Future Logic*, chapter 31.2)

3 Even purely "logical" if-then- statements depend for their understanding on geometrical experience. When I define "if P, then Q" as "P and nonQ cannot coexist" – I visualize a place and time where P and nonQ are together (overlapping) and

Geometrical "axioms" are thus not absolutes somehow intuited *ex nihilo*, or arbitrary rules in a purely symbolic system[4], but hypotheses made comprehensible and reasonable thanks to experience. That experience, as I argue below, need only be phenomenal (it does not ultimately matter whether it is "real" or "merely illusory") but it needs to be there in the first place. That experience does not have to give us the axioms ready-made – they remain open to debate – but it gives us the concepts underlying the terms we use in formulating such axioms. In this sense, geometry – and similarly all mathematics – is fundamentally empirical (in a phenomenological sense) – even if much rational work is required beyond that basic experience to express, compare and order geometrical propositions.

It is futile to attempt to avoid this observation by talking of succession of symbolic objects, A, B, C. Even here, I am imagining the symbols A, B, C in my mind or on paper as *themselves concrete objects* placed in sequence next to each other! I am still appealing to a visual – experiential and spatial – field. Thus, any claim to transcend experience is naïve or dishonest. **Experience is evidently a *sine qua non* for any axiomatization, even though it is clearly not a *sufficient* condition.** The experiences *make possible* and anchor the axioms, but admittedly do not definitely *prove* them – they remain hypotheses[5]. Geometry is certainly not as some claim a deductive science, but very much an inductive one, and the same is true of other mathematical disciplines.

3. Geometry is a Phenomenological Science

3.1 The so-called axioms of geometry have changed epistemological status in history as follows:

a) At first, they seemed *obvious*, i.e. immediately proved by experience (naïve view). But the naïve view, not being based on reflection, is rejected as such once reflection begins.

b) Then they were regarded as *axioms*, i.e. theses without possible credible alternatives (axiomatic view). But this view, which is a worthy attempt to justify the preceding, suffers upon further reflection from an apparent arbitrariness. The label "axiom" is found to be a pretentious claim to an absolute – when denial of it does not result in any contradiction.

c) Then it was considered that they were *merely credible hypotheses among other possibilities*, i.e. that alternative hypotheses were conceivable and possibly credible (hypothetical view). One can even imagine that different geometries might be applicable in different contexts, and regard the Euclidean model as approximately representative on the human everyday scale of things, and thus consider that all or many of these alternative hypotheses are equally credible.

d) Then they were thought to be *pure inventions of the human mind*, incapable of either verification or falsification (speculative view). This view may at first sight seem epistemologically unacceptable, since it claims to transcend the hypothetical view and posits to know a truth that is by definition beyond our testing abilities. However, it must be understood in the context of the doubt in the existence of geometrical points, lines or surfaces. That is, it is a denial of geometrical science as such.

However, as we shall see, these latter criticisms can themselves be subjected to rebuttal, especially on phenomenological grounds.

3.2 The arguments put forward against geometrical science as such[6] are indeed forceful. We have considered the main ones in the section on 'Unity In Plurality,' pointing out that physical objects do not, according to modern physical theories based on scientific experiments, have precise corners or edges or surfaces, but fuzzy, arbitrarily defined limits, so that we are forced to admit all things as ultimately just ripples in a single world-wide entity.[7]

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then negate this vision (mentally cross it off). One cannot just ignore that aspect of the ideation and claim a purely abstract knowledge.

4 As Cantor claims.

5 Euclid's axioms were the first attempted hypotheses, Hilbert and others later attempted alternative hypotheses.

6 Note well, this is not a discussion of space and time, but of the discipline called Geometry.

7 See chapter 4.5, above.

There might be a fundamental weakness in such argumentation – a logical fault it glosses over. If the whole of modern physical science *is itself based on* the existence and coherence of geometrical science (by which I of course do not mean only Euclidean geometry, but all the discipline developed and accepted over time by mathematicians), can it then turn around and draw skeptical conclusions about that Geometry? Remember, all the *mathematics* of waves and particles, of space and time, were used as premises, together with empirical results of physical experiments, to inductively formulate and test the physical theories we currently adhere to – can the latter physical conclusions then be used to argue against these very mathematical premises?

Logically, there is no real self-contradiction in this. The sequence is "Math theory" (together with empirical findings) implies "Physical theory" that in turn implies doubt on initial "Math theory." So what we have in fact is denial of (part of) the antecedent by the consequent, which is not logically impossible, though odd. The consequent is not denying itself, although it puts its own parent in doubt.

Thus, a more pondered and moderate thesis about geometry has to be formulated, which avoids such difficulties while taking into account the aforesaid criticisms regarding points, lines and surfaces. Waves and particles (which are presumably clusters of waves) may somehow be conceivable and calculable, without heavy reliance on the primary objects of our current geometry (points, lines and surfaces), which apparently have no clear correspondence in nature. In the meantime, our current geometry can legitimately be used as a working hypothesis, since it gives credence to our physical view.

3.3 Let us now consider where the extreme critics of geometry may have erred. We can accept as given the proposition that no dimensionless points, no purely one-dimensional lines, no purely two-dimensional surfaces (Euclidean or otherwise) can be pointed to in natural space-time accessible to us.

This is granting that to exemplify such primary objects of geometry we would need to find material objects with definite tips, edges or sides – whereas we know that all material objects are made of atoms themselves made of elementary particles themselves very fuzzy objects, apparently subject to Heisenberg's Uncertainty principle.

Nevertheless, we tend to regard the ultimate nature of these nondescript bodies to be clusters of "waves of energy". This is of course a broad statement, which ignores the particle-wave predicament and which rushes forth in anticipation of a unified field theory; furthermore, it does not address the question regarding what it is that is being waved, since the Ether assumed by Descartes has since the experiments of Michelson and Morley and Einstein's Relativity theory been (apparently definitively) discredited.

But my purpose here is not to affirm this wave view of matter as the ultimate truth, but rather to consider the impact of supposing that everything is waves on our question about the status of geometry. For if particles are eventually decided to be definitely not entirely reducible to waves, then geometry would be justified by the partial existence of particles alone; so the issue relates to waves.

If we refer to the simplest possible wave, whatever it be, a gravitational field or a ray of light – it behaves like a crease or dent in the fabric of the non-ether where waves operate (to use language which is merely figurative). Such hypothetical simplest fractions of waves surely have a geometrical nature of some sort. That is to say, if we could look[8] that deep into nature, we would expect to discern precise points, lines and surfaces – even if at a grosser level of matter we admittedly cannot.

Thus, I submit, the possible wave-nature of all matter is not really a forceful argument against geometry. Even if we can never in practice precisely discern points, lines and surfaces, because there may be no material bodies of finite shape and size, geometry remains conceivable, as a characteristic of a world of waves.

All the above is said in passing, to clear out side issues, but is not the main thrust of my argument in defense of geometry. We admittedly can perhaps never hope to perceive waves directly, i.e. our assumption of their geometrical nature is mere speculation. But that is not an argument of much force against geometry as such, in view of *its existence and practical successes*, which mean that geometry is not speculation in the sense of a thesis

8 Of course, such looking would have to be independent of a Heisenberg effect. A pure act of consciousness without material product. Clearly, this assumes that consciousness is ultimately a direct relation to matter, which transcends matter. Heisenberg's argument refers to experimental acts, interactions of matter with matter, which we use to substitute consciousness of an effect for that of its cause. The Uncertainty principle is not a principle about consciousness modifying its objects, but about the impossibility of unobtrusive experiment.

incapable of verification or falsification, a pure act of faith, but more in the way of a hypothesis that is repeatedly confirmed though never definitely proved. Simply an inductive truth – like most scientific truths about nature!

But let us consider more precisely how geometry actually arises in human knowledge. It has two foundations, one experiential (in a large sense) and the other conceptual.

3.4 The **experiential** aspect of geometrical belief is that *there seems to be* points, lines (straight or curved), surfaces (flat or warped) and volumes (of whatever shape) in the apparently material world we sense around us as well as in the apparently mental world of our imaginings. This *seeming to be* is enough to found a perfectly real and valid geometry. **The justification of geometry is primarily *phenomenological*, not naturalistic!**

Seeming is (I remind you) the appearance, or (in this case) phenomenal, level of existence, prior to any judgment as to whether such phenomenon is a reality or an illusion. In other words, geometrical objects do not have to be proven to be realities – in the sense of things actually found in an objective physical nature – they would be equally interesting if they were mere illusions! Because illusions, too, be they mere 'physical illusions' (like reflection or refraction) or mental projections, are existents, open to study like realities.

The study of phenomena prior to their classification as realities or illusions is called phenomenology. At the phenomenological level, 'seeming to be' and 'being' are one and the same copula. Only later, on the basis of broad, contextual considerations, is a judgment properly made as to the epistemological status of particular appearances, some being pronounced illusions, and the remainder being admitted as realities[9]. If, therefore, geometrical science has a phenomenological status, i.e. if it is a science that can and needs be constructed already at the level of phenomena, it is independent of ultimate discoveries about the physical world.

The mere fact, admitted by all, including radical critics of geometry, that we *get the impression*, at the human everyday level of perception, that a table has four corners and sides and a flat top, *suffices* to justify geometry. This middle-distance depth of perception, even if it is ultimately belied at the microscopic level of atoms or the macroscopic level of galaxies, still can and has to be considered and analyzed. A science of geometry only requires *apparent* points, lines and surfaces.

And even if this last argument were rejected, saying that the points, lines and surfaces we seem to see in our table are just mental projections by us onto it, we can reply that even so, mental projections of points, lines and surfaces are themselves real-enough objects existing somehow in this world. They may be illusions, in the sense that they wrongly inform us about the external world, they may be purely internal constructs, but they still even as such *exist*. A subjective existent is as much an existent as an objective one – in the sense that both are equally well phenomena.

The mental matrix of imagination, at least, must therefore be capable of sustaining such geometrical objects. And if this restricted part of the world – our minds – displays points, lines and surfaces – then geometry is fully justified, even if the rest of the world – the presumed material part – turns out to be incapable of such a feat and geometry turns out to be inapplicable to it.

But the latter prospect thus becomes very tenuous! As long as geometry could be rejected in principle, by the elusiveness of its claimed objects under the microscope, there was a frightening problem. But once we realize that the very existence of Geometry requires the possibility somewhere of the concretization of its objects – even if only as a figment of our imaginations – the problem is dissolved. In short, our very ability to discuss geometrical objects, if only to doubt their very existence, is proof of our ability to at least produce them in the mind, and therefore of their ability to exist somewhere in this world. And if all admit that geometrical objects can exist in some part of the world (the mental part at least), then it is rather inductively difficult and arbitrary to deny without strong additional evidence that they exist elsewhere (in the material part). The onus of proof reverts to the deniers of material geometry.

3.5 The **conceptual** aspect of geometrical belief must however be emphasized, because it moderates our previous remarks concerning the experiential aspect. Conceptualization of geometrical objects has three components, two positive ones and a negative one.

a) The primary positive aspect of geometrical conception consists of ***rough observation, abstraction and classification***, (i) refers to the above mentioned concrete samples of points, lines, surfaces and volumes, apparent

9 At which stage "is" acquires a more narrow and ambitious meaning than "seems to be".

in the material and mental domains of ordinary experience - this is phenomenological observation; and (ii) observes their distinctive similarities (e.g. that this and that shape are both lines, even though one is straight and short and the other is long and curved, say) - this is abstraction; and (iii) groups them accordingly under chosen names - this is classification.

b) The negative aspect of geometrical conception is the intentional act of ***negation***, reflecting the inadequacy of mere reference to raw experience. Unlike their empirical inspirations, a theoretical point has *no* dimension (no length, no breadth, no depth); a theoretical line is extended in *only one* dimension – it has no surface; a theoretical surface in *only two* dimensions – it has no volume. Each theoretical geometrical object excludes certain empirical extensions. It is thus an abstraction (based on concretes, of course) rather than a pure concrete.

As I have explained elsewhere, negation is a major source of human concepts, allowing us to form them without any direct experience of their objects. That is, while the concrete referents of "X" may be directly perceivable; those of "Non-X" need not be so. We consider defining them by negation of X as sufficient – since every thing (except the largest concept "thing", or existent) has to have a negation, since every thing within the universe is limited and leaves room for something else.

Such negative definition of the geometrical objects is not, however, purely verbal or a mere conjunction of previous concepts ("not" + "X"). There is an active imaginative aspect involved. I mentally, or on paper, draw a point or a line, and mentally exclude or rub-off further extensions from it. Thus, even if my mental matrix, or my pencil and paper, may be in practice unable to exemplify for me a truly dimensionless point or fine line or mere surface, I *mentally dismiss* all excessive thickness in my sample. This act may be viewed as a perceptual equivalent of conceptual negation.

c) Another, more daring positive conceptual act may be called ***assimilation***, which we can broadly define as: *regarding something considerably different as considerably similar*. This a more creative progression by means of somewhat forced simile or analogy, through which we expand the senses of terms.

For example, the concept of a "dimension" of space is passed on to time. The Cartesian fourth dimension is at first perhaps thought up as a convenient tool, but eventually it is reified and in Einstein we find it cannot be dissociated from space. Our initial concept of dimension has thus shifted over into something slightly different, since the time extension of bodies is distinctively one-directional and not as visible as their space extensions (see more on this topic in earlier chapters).

Another example is the evolution from Euclidean geometry, the first system that comes to mind from ordinary experience (and in the history of geometrical science), to the later Non-Euclidean systems. A shape considered as "curved" in the initial system is classed as "straight" or "flat" in another system. We have to assimilate this mentally – i.e. say to ourselves, within this new geometrical system, straightness or flatness has another concrete meaning than before, yet *the role* played by these previously curved shapes in it is equivalent to that played by straight lines or flat surfaces Euclidean system.

> Note well how ordinary experience of everyday events and shapes are repeatedly and constantly appealed to by the mind in all three of the above conceptual acts. It is important to stress this fact, because some mathematicians try to ignore such experiential grounding and cavalierly claim that what they do is independent of any experience. The whole of the present essay is intended to belie them, by increasing awareness of ***the actual genetic processes*** underlying the development of mathematical sciences.

The academic exercise of formulating the starting assumptions ("axioms") of the various geometrical systems does not occur in a vacuum. In order to understand whether "parallels" meet or not, I visualize ordinary (Euclidean) parallels, then imagine them curving towards each other or curving apart; then I say "even though they meet or spread apart, I may still call them parallel within alternative geometrical systems". Without some sort of concretization, however forced, the words or symbols used would be meaningless.

3.6 Finally, I'd like to mention here in passing that many of the remarks made here about geometry apply to other fields of mathematics. Thus, arithmetic should also be viewed as a phenomenological science. That is, its primary objects – the unit ("1") and growing collections of such units ("2", "3", etc.) – that is, natural, whole, positive, real numbers – do not require any reference to an established "reality," but could equally be constructed from a sense field (visual or other) composed entirely of illusory events or entities. It is enough that something appears before us to concretely grasp a unit, and many things, to concretely grasp the pluralities.

4. On "New Arithmetical Entities"

By arithmetic entities, we initially mean units and pluralities (the natural numbers). These objects, which are not unrelated to geometrical objects, need only be phenomenal. One can conceptualize a unit and pluralities of units equally well from an illusory or imaginary field of perception as from a real one. The sense-modality involved is also irrelevant: shapes, sounds, touch-spots, items smelt or tasted – any of these can be units.

What is the epistemological status of novel arithmetical entities? Some mathematicians apparently claim that a concept like the negative number –1 or the imaginary number √-1 is a "new entity" incapable of being reduced to its constituent operations (-, √) and numbers (1, etc.). The definitions of such abstract entities are given in series of equations like:

> Where –1 + 1 = 0, –2 + 2 = 0, etc….
> or
> Where √-1 • √-1 = –1, √-2 • √-2 = –2, etc….

However, this means that the signs used (– , + , = , √ , • , ⁄ , etc.) are *each in turn a new thing in each definition*, even though presented to us in the same physical form (symbol-shape and name) as existing entities. Here, the sign that was originally an operator (a relational concept between two terms) has become attached to a term (making of it a new term) – so that the sign itself has changed nature.[10]

It seems clear to me that this doctrine of irreducibility and newness, while a good-faith try at explaining the leaps of imagination involved in such mathematical concepts, in fact involves some dishonesty since such definitions tacitly rely on the implicit meanings of the building blocks that are their sources both logically and in the progression and history of thought.

Rather we should, in my view, look at these leaps as **indefinite stretching of meaning**, i.e. we say: "let this concept (-,√, whatever) be widened somewhat (to an undecided, undetermined extent) so that the following *analogy* be possible…." This extending of meaning (or intention) is itself *imaginary*, in that we cannot actually trace it (just we cannot concretize the concept of infinity by actually going to infinity, but accept a hazy non-ending).

(Such development by analogy is nothing special. As I have shown throughout my work, all conceptualization is based on grouping by similarity, of varying precision or vagueness – or the negation of such. Terms are rarely pre-definable, but are usually open-ended entities whose meaning may evolve intuitively as more referents are encountered.)

We thus produce doubly imaginary *hypothetical* entities. And here an analogy to the concrete sciences is possible, in that the properties of such abstract entities are tested (in accordance with adductive principles), not only *logically* in relation to conventions and arbitrary laws initially set up by our imagination (as the said mathematicians claim), but also *empirically* in relation to the properties known to be obtained for natural numbers.

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10 Personally, with reference to terminology used in formal logic, I would say that negative numbers or irrational numbers or imaginary numbers are *compounds of copula and predicate*. They are artificial predicates, consisting of a normal predicate (final term) combined with the relational factor (copula) to any eventual subject (first term). They "hold-over" or "carry-over" a *potential* operation – that of subtracting or finding a root or both – until the unstated term (the subject) is specified. Such expressions give rise to a predicate in the original sense (i.e. a number), and disappear, when the operation is actually effected. Their status as effective predicates is only utilitarian. It is interesting to note, in this context, that within general logic, such *permutation* (as it is called) is not always permissible (see my treatment of the Russell Paradox, in *Future Logic* chapter 45, for example). For this reason, one should always be careful with such processes.

Natural numbers, therefore, do not merely constitute a small segment of the arsenal of mathematical entities (as they claim), but have the status of *limiting cases* for all other categories of numbers (negatives, imaginaries, etc.)[11]. **If any proposed new abstract formula *does not work for natural numbers*, it is surely rejected.**

This is evident, for instance, in William Hamilton's attempted analogy from couples to triplets. He found that though complex numbers expressed as couples (with one imaginary number $\boldsymbol{i}^2 = -1$) could readily be multiplied together, in the case of triplets (using two imaginary numbers $\boldsymbol{i}^2 = \boldsymbol{j}^2 = -1$) results inconsistent with expectations emerged when natural numbers were inserted in the formula.[12]

Note particularly this reference to two (or more) different imaginary numbers, namely ***i*** and ***j*** whose squares are both equal to –1. Here, we introduce ***j*** as an imaginary extension of the concept of ***i*** that has ***no distinguishing mark other than the symbolic difference applied to it***! We simply imagine that the meaning of ***j*** might somehow differ from that of ***i*** so that although $\boldsymbol{i}^2 = \boldsymbol{j}^2 = -1$ it does not follow that $\boldsymbol{i} = \boldsymbol{j} = \sqrt{-1}$ (or even that $\boldsymbol{ij} = -1$). An unstated and unspecified differentia is assumed but never in fact provided[13]. This is yet another broadening of mathematics "by stretching" (i.e. by unsupported analogy, as above explained).[14]

The example here referred to clearly shows that, however fanciful its constructs (by definition and analogy), mathematics undergoes an occasional empirical grounding with reference to natural numbers, which limits the expansiveness of its imagination and ensure its objectivity. New mathematical entities, although initiated by mere conventions or arbitrary postulates, must ultimately pass the test of applicability to natural numbers, i.e. consistency with their laws, to be acceptable as true mathematics. Natural numbers thus fix empirical restrictions on the development of theoretical mathematics.

5. Imagining a Thoroughly Empirical Arithmetic

If I may be allowed some far-out, unorthodox, amateur reflections consider the following concerning fractions of natural numbers[15].

A physical body can only really be divided into *n* parts, say, if it has a number of constituents (be these molecules or atoms or elementary particles or quarks or whatever) divisible exactly by *n* – otherwise, the expression 1/n has no realistic solution!

For example, a hydrogen atom cannot be divided by two, unless perhaps its constituent elementary particles contained an even number of quarks. Or again, if I wanted to divide (by volume or weight) an apple fairly among three children, it would have to have a number of identical apple molecules precisely divisible by three.

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11 Natural numbers have, and thus retain, an exceptional ontological status. Their derivatives are thus inductively adapted to the previously established algebraic properties of natural numbers. The point of all this is, of course, to develop a universally effective algebra – *processes and rules that function identically for natural numbers and all their derivatives*, uniform behavior patterns.

12 Later, he showed that quadruplets or quarternions - involving three imaginary numbers *i, j, k* – could however be multiplied together. Similarly with an eight-element analogy.

13 At a later stage, these different imaginary numbers *i, j, k* etc. are associated with geometrical dimensions – but such application is not relevant at the initial defining stage.

14 I should here repeat that this mental process is not limited to the mathematical field. For instance, in psychology, when we speak of "mental feelings", as distinct from physical feelings (experienced viscerally, in the chest or stomach or rest of the body, whether of mental or purely physical source), we are engaging in such analogy. By definition, mental feelings (e.g. I *like* you) have no concrete manifestation that we can point to; we introduce them into our thinking by positing that they are somehow, somewhat similar to feelings experienced in the physical domain, but they occur in the mental domain and are much less substantial (more abstract). The word "feeling" thus takes on a new wider meaning, even though we have no clear evidence (other than behavioral evidence of certain values) for the existence of a mental variety of it. Thus, Mathematics should not be singled out and scolded for using such processes – they are found used in all fields – but it is important to notice where such leaps of imagination occur and acknowledge them for what they are, so that we remain able to test them empirically as far as possible. Incidentally, such leaps are comparatively rare in Logic.

15 I spoke of these ideas once, back in April 1998, at a round-table at the Archives Piaget in Geneva.

Otherwise, each child would get 0.333… (recurring) part of an apple – which we have no experimental proof is practically possible and indeed we know is not!

> The concept of an infinitely recurring decimal is a big problem – consider the debates about Π (pie) in the history of mathematics. How can I even *imagine* going on adding digits to infinity, when I know my life, and that of humanity, and indeed of the Universe are limited in time, and when I know that space is physically limited so that there would not be place enough for a real infinity of digits even if there were time enough? Surely, such a concept may be viewed as an antinomy.

What this means is that arithmetic as we know it is not necessarily a thoroughly "empirical" science – it is an ideal assuming ***infinite divisibility*** of its objects. The mere fact that I can imagine an apple or atom as divisible at will, does not make it so in the real world. Though in some cases the number ½ or 1/3 may have a real object, a realistic solution, in many cases this is in fact a false assumption. [16]

Even in the mental domain, although we can seemingly perfectly divide objects projected in the matrix of imagination (whatever its "substance" may be), it does not follow that viewed on a very fine level (supposing we one day find tools to do so) such division is always in fact concretely possible.

These thoughts do not invalidate the whole of arithmetic, but call for an additional field or system of arithmetic where the assumption of infinite divisibility of integers is *not* granted. That is, in addition to the current "ideal" or a-priori arithmetic (involving "hypothetical" entities, like improper fractions or recurring decimals), we apparently need to develop a thoroughly "empirical" or a-posteriori – one might say positivist – arithmetic, applicable to contexts where division does not function.[17]

The same may of course be said of the related field of geometry. Infinite divisibility is a mere postulate, which may stand as an adopted axiom of a restricted system, but which should not at the outset exclude alternative postulates being considered for adjacent systems. The mathematics based on such postulate may be effective – it seems to work out okay, so perhaps its loose ends cancel each other out in the long run – but then again, the development of other approaches may perhaps result in some new and important discoveries in other fields (e.g. quantum mechanics or unified field theory)[18].

Why should mathematics be exempt from the pragmatic considerations and norms of knowledge used in physics? Can it, like alchemy or astrology were once, be uncritically based partly on fantasies? Surely, every field of knowledge must ultimately be in perfect, holistic accord with every other field and with all experience – to be called a "science" at all. The division of knowledge into fields is merely a useful artifice, not intended to justify double standards and ignorance of seemingly relevant details. Once philosophy has understood the inductive nature of knowledge, it demands severe scrutiny of all claims to a-priori truth and strict harmony with all a-posteriori truths.

We could get even more picky and annoying, and argue that no material (or mental) body is as finite as it appears, as we did in the section on 'Unity In Plurality.'[19] Since the limits of all material or mental entities are set arbitrarily, it follows that everything is one and the same thing, and that nothing is at all in fact divisible.

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16 We should also perhaps make a distinction between divisibility and *separability*. Even if I may distinguish a number of equal parts in a body, I may not in fact (by some natural or conventional law) be able to actually isolate these constituents from each other. In which case, what would division of that number *by itself* factually mean? Would say 5/5 equal 1, or would it be a meaningless formula, without solution? Is 5/5=1 a universal equation or is it only *true* in specific situations? (By conventional law, I mean for example, when farthings or halfpennies were withdrawn from circulation, a penny could no longer be subdivided in accounting.)

17 Clearly, I am using the word "empirical" here in a specific sense. Even "ideal" arithmetic has an empirical *basis*, in the sense that at least its primary objects - the natural numbers 1, 2, 3, … - are phenomenological givens. But it does not follow that further processes, such as division, always have an empirical basis – hence my use of the adjective *thoroughly* empirical.

18 For all I know, such alternative mathematics already exist. I do not claim to know the field, nor have any desire to seem original or revolutionary. These are primarily philosophical reflections.

19 See chapter 4.5, above.

However, such (almost metaphysical) reflections need not (and won't) stop us from pursuing mathematical knowledge, since they gloss over issues to do with causality[20].

That mathematical science is like all knowledge inductive, and not merely deductive, is evident from any reading of the history of the subject. Mathematicians understand the word induction in a limited sense, with reference to leaps from examples or special cases to generalities (abstractions or generalizations) or to analogies ("as there, so here" statements). But I am referring here to many more processes. Individual mathematicians, as they develop mathematics, use trial and error (adduction), putting forward hypotheses and analyzing their consequences, rejecting some as inadequate. Initially accepted mathematical propositions have often been found mistaken by other or later mathematicians, due for instances to vagueness in definitions or to short-circuits in processing, and duly criticized and corrected.

Mathematicians are well aware of the breadth of their methodology in practice. Mathematics is a creative enterprise for them, quite different from the learning process students of the subject use. The latter have the end-results given them on a platter, so that their approach is much more deductive. Mathematicians do not merely recycle established techniques to solve problems and develop new content; to advance they have to repeatedly innovate and conceive of new techniques.

20 Which issues I will be dealing with in my forthcoming work on the subject.

9. Theology Without Prejudice[1]

1. Applying Logical Standards to Theology

Most theologians discuss God without telling us how they came to know so much about Him; they think that to refer to "revelation" through some prophet or other, or to their own alleged "insights" is enough justification. On the other hand, some science-minded philosophers do not admit of any validity to theology; they argue that the concept of God is a figment of mankind's imagination and therefore that nothing of scientific value can be said about it. Both these approaches are logically improper. Or, as it is written in Proverbs 18:13:

"*He that answereth a matter before he heareth it, it is folly and shame unto him*."

Theology is undoubtedly a legitimate branch of philosophy. It is intrinsically *speculative*, in that we cannot ever hope *to prove or disprove* its basic premise that God exists, as I showed in *Judaic Logic*. Briefly put:

a. When we try to prove the existence of God with reference to the existence of the universe, or to some empirical feature (such as the order or beauty of things) or content (such as life or mankind) of the universe, we inevitably get into circular argument. For then *the same standard of judgment has to be applied* to the concept of God, i.e. we need to explain His existence or attributes and cannot take them for granted. *All the more so,* since He is less empirically evident than the things we have appealed to the concept of God to explain.

b. When we try to disprove the existence of God with reference to some empirical data or theoretical construct, we inevitably open the way to one-upmanship. However we depict the universe, the believer can always say: "well, *that's* how God made it!" The scientist (physicist, cosmologist, geologist, biologist, whatever) may well argue that a Biblical or other account of things is incorrect according to current science, but the scientist will find no argument to deny the claim that the universe *as he describes it* may have its ultimate source in "God". The scientist cannot deny "metaphysics" to the believer, without himself (i.e. the scientist) engaging in "metaphysics". Claiming to know that something beyond the knowable *is not*, is as pretentious as claiming to know that it *is*!

The concept of God is indeed a theoretical construct, whether someone else's or one's own. This does not imply it to be invalid or irrelevant, for the simple reason that *all* conceptual knowledge is ultimately based on "theoretical construction", including all orthodox science. A concept may be admittedly speculative, and yet of interest and relevance to human thought and action. On the other hand, it does not follow that the idea of God can be formed without regard to *empirical and logical tests*. Our discourse on this subject like any other has to be in reasonable accord with current knowledge and internally consistent.

Purely scientific knowledge follows the laws of induction very obediently: it generalizes when that is recommended and particularizes when that is recommended. When it does not find what it is looking for (e.g. a particle or a missing link) after diligent search, it assumes that what it sought was absent all along. By way of contrast, speculative knowledge remains a bit freer, refusing to generalize offhand from "not found" to "nonexistent". Scientists also speculate, keeping their minds open on certain theories or predictions for a long time. Without this attitude, their thought would always be straitjacketed by excessive formalism.

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1 This chapter was left out of the first edition of *Phenomenology*.

Religious thinkers have a right to a similar allowance, and should not be discredited offhand by the very nature of their search by closed-minded pseudo-scientific totalitarians. Such rejection would not be science, but secularist dogma. Nevertheless, it is true that religious thought is very often excessively informal, and tends to proceed willy-nilly without regard for the rules of induction, ignoring empirical evidence and indulging in shamelessly manipulative pseudo-deductions. Here as in any other field, we have the right to demand honesty and sanity.

> In particular, I would characterize as cretinism the debonair approach of some religious fundamentalists, consisting in simply refusing to accept the current findings and interpretations of science, like the Big Bang cosmological theory or the Evolution theory in biology (or in the not so faraway past, the Copernican system). Such theories are in no way (as far as I can tell) incoherent with Creationism, i.e. the simple idea that God created the material universe, even if some scientists provocatively declare them to be. Even the idea that the material universe is perpetual can be reconciled with Creationism, by considering it as a timeless emanation of God.
>
> Such theories may well be in a state of tension with too literal a reading *of the Bible* or similar documents, however. In that case, the holy book defender ought not to discredit religion entirely by insisting on antiquated viewpoints, but should rather stick to basics and essentials, and progressively adapt his interpretations accordingly. Even if the current scientific theories are not definitely proved and scientists frankly admit to having difficulties with them, it is silly to fight a rearguard battle against sincere seekers after truth, by (for instance) forbidding the teaching of such theories in schools.
>
> It is also worth stressing the immense riches of reflection involved in scientific thought. Those who resist progress should but consider the grand tapestry of evolving life taught by modern biology, which is just a continuation of the still broader narrative of the evolution of matter taught by modern cosmology. What a loss to humanity if these profound insights were lost, which teach us humility and solidarity.

The phenomenological approach to theology consists simply in remaining at all times aware of the processes through which our theological beliefs or disbeliefs are generated and built-up. Our reason can then evaluate the processes, and in a balanced manner (with neither excess rationalism nor excess emotionalism) arrive at moderate, non-ideological conclusions.

It is important to accept at the outset that God's existence and attributes can, for us common folk who have not been privileged with direct and epistemologically indubitable experiences or visions of God, only be hypothesized, and indeed only be speculated upon. *Concepts* of God and His attributes can be built up and made cogent, but can never ordinarily be established. Some doubt always does and will remain, and this is where faith is brought into play (making certain actions possible despite legitimate doubt).

> And by the way, if these limits to human knowledge are evidently true with respect to God and his defining attributes, how much more true they are with regard to all the stories, rituals and laws found in written and oral traditions. The latter do not follow automatically upon faithful acceptance of the former, and there are many conflicting theses (all the religions and sects).

2. Conceiving the Divine Attributes

The epistemological question as to how we humans conceive the Divine attributes must not be confused with the issue of proving that the Creator has them (granting His existence, which is not easy to prove[2]). Explaining the arising of a concept (if only for speculative purposes) is easier than, and of course prior to, proving it. It is widely understood, by believers, agnostics and atheists alike, that we conceive God's attributes by means of *extrapolation from our own limited attributes*. Even God's **unity, uniqueness,**

2 Or to disprove.

ubiquity and infinity are so conceived. Any valuable or virtuous power found in us in limited degrees, is considered as present in God in unlimited degree. Thus:

- From our partial power of volition or freewill, we can conceive that God has or would have total power – **omnipotence** (or all-powerfulness).
- From our partial power of knowledge, we can conceive that God has or would have total power – **omniscience** (or total knowledge).
- From our partial power of loving-kindness and mercy, we can conceive that God has or would have total power – **all-mercifulness** (or complete kindness).
- From our partial power of justice, we can conceive that God has or would have total power – **perfect justice**.

Likewise for all values and virtues, we pass from our own imperfect qualities to God's extreme possession of them. We generalize from 'some' good in us to 'all' good in Him. This is an ordinary *inductive* movement of thought, requiring no special justification. From a relatively empirical concept, we project a hypothetical concept, which is thereafter open to discussion (further confirmation or eventual rejection). We do not need to actually stretch our minds as far as the extreme, and personally experience infinity, omniscience or omnipotence, to be able to conceive it[3]. Just as general propositions are knowable[4], so are hyperbolic concepts. However, to repeat, conceiving does not imply proving.

> Note that, inversely, with regard to faults or vices, while we have some, God has none. Here, we do not go from some bad to all bad, but to no bad. This is done to maintain speculative consistency: we cannot affirm extreme positives, if we do not deny the corresponding moderate or extreme negatives. Some people hypothesize both positive and negative gods (the Zoroastrian religion, or the currents of Christianity which believe in an independent devil); but in those cases neither proposed entity has *stricto sensu* extreme attributes, since they are in competition.

As it happens, while these generalizations individually are logically acceptable, in some cases taken together with each other or with other items of knowledge or belief, they may cause logical difficulties. We are then called upon to try and reconcile the conflicting theses. Notably, Divine omnipotence may be viewed as in logical conflict with natural determinism (in the case of Divine Providence) or human freewill (as an abdication of power by God). Or omniscience may be regarded as conflicting with the unpredictability of human freewill. Or again, infinite mercy and total justice can be considered as in mutual conflict, as well as in conflict with the apparent facts of unpunished vice or unmerited enjoyment, or of unrewarded virtue or undeserved suffering.

But as we shall see, our conceptions of the Divine attributes are not just generated by such simple extrapolations of human attributes; more refinements are involved in each case.

- Our concept of omnipotence is also based on the human analogy that just as a person (or group) can apparently interfere in the otherwise natural course of some events, so can God but only more so, i.e. whatever the events. Also, just as one person (or group) can physically or through mental (including verbal) influence delimit, force or block, incline or disincline another to engage in certain voluntary acts, so God can exercise His will on occasion without implying that Man in principle lacks freewill.
- On the other hand, whereas human freedom of will is naturally limited, i.e. there are natural laws and human events (and possibly Divine decrees) no person or group can circumvent or affect, in the case of God as we conceive Him no such limitation exists, He is stronger than all other forces combined. Though God could make Nature lawless or prevent any human freedom of choice, He usually chooses not to act thus, but only exceptionally (according to Biblical accounts of miracles) interferes in natural or human affairs. Precisely that is His apparent will, that there should be natural law and human freedom of will, since that is what seems to be occurring.
- Similarly, regarding omniscience, we can render our concept of God's power more credible by considering the corresponding smaller-scale human power in greater detail. Some philosophers

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3 My position here is intended to mitigate some of my statements in *Judaic Logic*, p.206.

4 This is incontrovertible, since its denial is self-contradictory, being a general proposition itself.

consider that Divine omniscience is logically incompatible with human freewill, since it would imply that God knows Man's choices before he makes them. However, if we reflect, we can see on the human scale that these ideas are more compatible than that.

- A person can, through memory or by inferences, see his own or other people's past acts of will: such *hindsight* by us of volitional events does not seem contradictory. If we conceive God as located at the end of time (our own or all history or eternity), looking back at all our acts of will, the problem dissolves. That is, the said problem arises due to an assumption of foresight (as would be the case for humans), but seems less intractable if hindsight (for God) is assumed.
- As I argue elsewhere (e.g. see chapter 6.2.3), we can *experience* motion directly within the present moment, i.e. without recourse to memory. It follows that the present is for us *extended in time* (a moment), and not just a point in time (an instant). The extent of this experienced stretch of time is admittedly small in our case, but it is conceivably larger for God's span of awareness, covering what is for us a big chunk of time at once. This thesis is all the more conceivable, because the present seems even for us of variable breadth.
- If God can thus overview human lifetimes or all of history or eternity in one grand 'moment', then He is always with regard to such stretch of time effectively in a position of hindsight, i.e. He can see our volitions without affecting them. Within the grand moment accessible to Him, all events are quasi-simultaneous, as if He could mentally travel instantaneously from its beginning to its end and back at will. Thus, what appears to us as paradoxical foresight would simply to him constitute hindsight.

- Note additionally that omniscience does not only mean the ability to know across time, but more broadly to know all events everywhere, as well as all timeless events (abstracts). Seeing events many places at once could be viewed as almost as problematic as seeing events in many times at once. Yet, just as human perception can evidently overview a considerable amount of space, so by extension it is conceivable that God can perceive all space.
- I think that a lot of the conceptual difficulty many have with the idea of God can be dissolved if we view God as positioned proximately and parallel to and at least coextensive with (and probably much greater than) the natural world we live in. By that I mean that the view of God as suspended far away from it all causes conceptual difficulty in relating Him to the natural world. But if we rather understand God as hidden behind (or underneath or above or next to) the natural world, separated from it only by the veil of our own blindness to Him, then He becomes more conceivable[5].
- To modernize these ideas with reference to Relativity Theory, we could speculate that God (as regards the world we inhabit, at least) resides ***at the center (or better, throughout the inside and perhaps also beyond) of the four-dimensional space-time 'sphere' (whose 'surface' is our material world)***. In this way, God would always be *equidistant* from (or better, contiguous with) all places and times, all points in this world. He would both transcend space and time, and be adjacent to (or even also immanent in) it. Perhaps this describes what mystics and deep meditators refer to as the "eternal present". (Note also that Albert Einstein's arguments refer to the immanent *material* world and the maximum velocity of light signals in it: he does not consider or deny that *consciousness* may transcend matter, nor that its scope might be instantaneous.)[6]

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5 The Buddhist idea of an "original ground of being" (experienced in deep meditation) from which phenomenal existences appear to spring, is a useful image in this context. Another image we can use is the Kantian idea of a Noumenon underlying the Phenomenon.

6 In this spherical perspective, we can conceive of Creation as timeless, and thus perhaps come to an agreement with Stephen Hawking. Creation would refer to the interface or transition between God (the spiritual core) and the material universe (the outer crust). Tangentially, within the four-dimensional surface, there would be no spatial or temporal beginning; but along the radius of the sphere, the surface has a beginning.

The above comments are not intended as exhaustive. See also, concerning the issue of God and causality, my comments in preceding chapters as well as in *Buddhist Illogic* (2002) and *The Logic of Causation* (1999, 2003).

3. Analyzing Omniscience and Omnipotence

In *Judaic Logic*[7], I expressed some misgiving concerning the consistency of the concept of omniscience. The following is an attempt to analyze the issue further.

The form (a) "I know that (I know nothing)" is inconsistent, since it implies "I know something" and "I know nothing" (i.e. "I do not know anything").

The following forms are, however, consistent: (b) I do not know that (I know nothing); (c) I know that (I know something); (d) I do not know that (I know something).

Strictly speaking, the paradox in (a) yields the conclusion (b), rather than (c), i.e. it does not exclude (d) at the outset. Unless we regard "I know nothing" as inherently paradoxical too, in which case "I know something" is implied: I think this is justified by reflection, i.e. once "I know nothing" is affirmed, we can classify it as a claim to knowledge, and thus reject it as implicitly inconsistent. Another way to the same result is to say that the "I do not know..." forms, (b) and (d), are implicitly claims to knowledge, about the state of one's knowledge or ignorance, so that they imply (c).

Self-consciousness, even of one's ignorance, implies consciousness, and therefore knowledge. Or simply put, (c) is logically true of all self-conscious beings (i.e. humans and God, at least - perhaps some higher animals too). However, *we* cannot claim (c) true for seemingly merely conscious beings, we can only say for them "they know something".

The form of omniscience is (e) "I know that (I know everything)". The simpler form "I know everything" implies the reflexive, because if you know everything, then you must also know that fact. This is self-consistent, and therefore claimable for God. The form (f) "I do not know that (I know everything)" is *not* self-consistent, since it both implies "I do not know something" and *allows for* "I know everything".

Similarly, (g) "I know that (I do not know everything)" is self-consistent, as is the prior form "I do not know everything", and this is the situation for humans and perhaps some higher animals (in both cases) and merely conscious animals (in the non-reflexive case). The form (h) " I do not know that (I do not know everything)" implies both "I do not know something" and "I do not know everything", the former of which implies the latter of which: there is no inconsistency.

The difficulty in the concept of omniscience is not deductive, but inductive. Granting you know everything, then of course you know that you know everything. But it is also conceivable that you have arrived at total knowledge gradually, by inductive processes, in which case, how would you know for sure that you know everything? And if the latter *possibility* exists, then whoever is apparently in a state of total knowledge (even by non-inductive means) is also a bit in doubt about it. That is, in practice, "I know everything" does not imply "I know that (I know everything)", or more precisely, even granting *the fact* that so and so knows everything, it does not follow that so and so *knows it* for a fact. That is, ***omniscience does not necessarily include the reflexive knowledge of one's omniscience***. In a sense, this result looks paradoxical, but in a way it confirms my general suspicion towards self-inclusive classes.

There is also to consider the conceptual compatibility between the Divine attributes of omniscience and freewill. Theologians have considered the compatibility of God's omniscience and *Man's* freewill, though in my view not satisfactorily; that is, those who have sought reconciliation have not so far as I know really succeeded - it was rationalization rather than true resolution (I attempt a more convincing argument above). But have they at all asked how *God* could have both freewill and omniscience? If God knows everything, including in advance what He will do, how can He be said to freely choose what He does? I think my attempted answer to the first question (in the preceding section) can also be applied to the

7 P. 206.

second. For God, all of time is one moment, so there is no before or after, and all knowing and doing are effectively simultaneous.

With regard to logical issues in the concept of Omnipotence, the following should be added. Omnipotence cannot be consistently defined in an unlimited manner, as literally the power to do anything whatsoever. We must rather say: God can do anything do-able in principle.

What distinguishes Him from all other entities is that whereas we finite beings can only do *some* (indeed, very few) of the things that are in the realm of the possible, God can do *all* that can conceivably be done. What He cannot conceivably do is *illogical* things like "creating Himself", or "creating things that are both A and non-A, or neither A nor non-A", or "annulling His own omnipotence", or "annulling the factuality of past facts". We might presumably add to this list the impossibility of His self-destructing (which would contradict His eternity), or of destroying His other defining characteristics. Moreover, I would personally — perhaps because I am a Jew (I say this so as not to offend the sensibilities of Christians, Hindus and others) — consider God incapable of incarnating, i.e. concentrating His being in a finite body, while remaining infinite.

It is not however inconceivable that God would eventually annul, circumscribe or reverse natural laws that are logically (as far as we can tell) replaceable. Here a distinction has to be drawn between natural modality and logical modality (see my work *Future Logic*, in this regard). In this context, local and temporary "miracles", as are described in the Bible (e.g. the parting of the Red Sea) or other religious books, are quite conceivable – as punctual exceptions to natural law. Natural laws that are not logical laws may well be conditional upon the non-interference of God – this concept would in no way diminish their effective status as laws. Notwithstanding, it must be remembered that many such laws are logically interrelated to others, so that they might not be by-passed in isolation, but God would have to make multiple or systemic changes to produce a desired effect.

> But we do not need to consider God's every interference in the world as an abrogation of natural law. God might well have reserved for Himself a role as a powerful player *within* Nature.
>
> This remark can be understood, if we consider the analogy of human will (or, more generally, animal will). The latter is conceived by us as able to overpower the natural (i.e. deterministic) course of event; furthermore, one human's will may be more powerful than another's. Humans (and other animals) are nevertheless considered as part of Nature, in a broader sense. We can similarly, by extension, on a larger scale and at deeper levels, regard God's providence. To refer again to Biblical examples: He may have split the waters of the sea as we would make waves in our bathtub; He may have influenced Pharaoh's decisions as we would suggest things to weaker minds.
>
> If we limit our concept of Nature to deterministic events, then even human and animal will, let alone God's will, must be classified as unnatural. But if we understand the concept of Nature as covering *whatever happens to occur*, then not even God's eventual ad hoc interference in the ordinary course of events (deterministic or of lesser volitions) is unnatural.

Thus, to conclude, God's omnipotence cannot be conceived anarchically. God's will, in contrast to ours, is undetermined by "external" or "internal" forces and influences. But the concept remains, as for the other defining attributes, subject to consistency and other rational and empirical checks, i.e. to the laws of logic.

4. Harmonizing Justice and Mercy

Just as God's existence cannot be proved (or disproved), so also His attributes cannot definitively be proved (or disproved). If an attribute could be proved, that to which it is attributed would of necessity also be proved. (If all attributes could be disproved, there would be no subject left.) We may however admit as conceivable attributes that have been found internally coherent and consistent with all known facts and postulates to date. (Conversely, we may reject an attribute as being incoherently conceived or as incompatible with another, more significant principle, or again as empirically doubtful.)

Among the many theological concepts that need sorting out are those of justice and mercy[8]. Justice and Mercy: what is their border and what is their relationship?

Mercy is by definition injustice – an acceptable form of injustice, said to temper justice, render it more humane and limit its excesses. But many of the things we call mercy are in fact justice. Often when we ask (or pray) for mercy, we are merely asking not to be subjected to injustice, i.e. to undeserved suffering or deprivation of well-being.

Justice is giving a person his due, either rewarding his virtues or punishing his vices. Asking (or praying) for either of these things is strictly-speaking not a request for mercy, but a demand for justice.

So, what is mercy? A greater reward than that due (i.e. a gift) or a lesser punishment than that due (i.e. partly or wholly forgiving or healing after punishing). In the positive case, no real harm done – provided the due rewards of others are not diminished thereby. In the negative case, no real harm done – provided there were no victims to the crime.

An excess of mercy would be injustice. Insufficient punishment of a criminal is an injustice to victim(s) of the crime. Dishing out gifts without regard to who deserves what implies an unjust system.

But in any case, this initial view of moral law is incomplete. Retribution of crime is a very imperfect form of justice. True justice is not mere punishment of criminals after the vile deed is done, but *prevention* of the crime. Our indignation toward God or a social/political/judicial system stems not merely from the fact that criminals often remain unpunished and their victims unavenged, but from the fact that the crime was at all allowed to be perpetrated when it could have been inhibited. In the case of the fallible and ignorant human protectors of justice, this is sometimes (though not always) inevitable, so they can be excused. But in the case of God, who is all-knowing and all-powerful, this is a source of great distress and doubt to those who love justice.

There are, we usually say, two kinds of crime: those with victims and those without. The latter include crimes whose victim is the criminal himself (they are his own problem), or eventually crimes against God (who, being essentially immune to harm, and in any case quite capable of defending His own interests, need not deeply concern us here). With regard to crimes with victims, our concern is with humans or animals wrongfully hurt in some way. The harm may be direct/personal (physical and/or mental – or in relation to relatives or property, which ultimately signify mental and/or physical harm to self) or indirect/impersonal (on the environment or on society – but these too ultimately signify an impact on people or animals).

A truly just world system would require God's prevention of all crime with innocent victims, at least – which He does not in fact do, judging by all empirical evidence, which is why many people honestly doubt His justice or His existence. To say (as some people do) that the failure to prevent undeserved harm of innocents is mercy towards the criminals, giving them a chance to repent, is a very unsatisfying response. It doesn't sound so nice when you consider that it was 'unmerciful' (i.e. *unjust*) to the victims: they were given no chance. Perhaps, then, if not in a context of prevention, the concept of mercy has some place in the context of *ex post facto* non-retribution.

Avenging the victims of crime seems like a rather useless, emotional response – too late, if the victim is irreversibly harmed (maimed, killed, etc.). If the victim were not irreversibly harmed, his restoration and compensation would seem the most important thing, preferably at the expense of the criminal. But we know that vengeance also to some degree serves preventive purpose: discouraging similar acts by other potential criminals (raising the eventual price of crime for them) or educating actual criminals (so they hopefully do not repeat their misdeeds). To be 'merciful' to actual criminals with victims is therefore not merely to abstain from a useless emotional response, but to participate in eventual repetitions, of similar crimes by the same criminal or others like him.

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8 This essay was written in 1997, save for some minor editing today. Reading it now, a few years later, I find it unnecessarily aggressive in tone. I was obviously angry for personal reasons at the time of its writing. Nevertheless, I see no point in toning it down today.

It must be stressed that taking into account extenuating circumstances is not an act of mercy, but definitely an act of justice. Not to take into account the full context in formulating a judgment is stupidity and injustice. Perhaps the concept of mercy was constructed only to combat imperfectly constructed judicial systems, incapable of distinguishing between nuances of motive and forces. The law says so and so without making distinctions and is to be applied blindly without variation – therefore, 'mercy', an apparently 'irrational' exception to the law, is necessary! It would not be necessary if the law were more precisely and realistically formulated. Thusly, as well for allegedly Divine law systems as for admittedly human law systems. If the system and those who apply it are narrow-minded and inhumane, of course you need 'mercy' – but otherwise, not.

Another way the concept of mercy is used is in wish or prayer. We hope that the 'powers that be' (Divine or human) will indeed give us our due, rewarding our good efforts or preventing or punishing our enemies' evil deeds, even though this is not always the case in this imperfect world. Such calls to mercy are a form of *realpolitik* – they are not really calls for injustice, but calls for justice clothed in humble words designed to avoid a more fundamental and explicit criticism the failure of true justice of the powers-that-be. Again, if absolute justice were instituted, there would be no need for such appeals to 'mercy'; the right would be automatically done. Well, human justice is inevitably deficient: even with the best of intention and will, people are neither omniscient nor infallible, so uncertainty and even error are inevitable, and in such context 'mercy' is perhaps a useful concept.

But in the case of God, what excuses can we give? How can we justify for Him the imperfection of the world? We try to do so with reference to freewill – justice presupposes responsibility, which presupposes freedom of choice. But this argument is not fully convincing, for we can dig deeper and say: if the world *couldn't* be made just, why was it made *at all*? Or if it had to be made, why not a world of universal and unvarying bliss – who ever said that freewill was required? For this question there seems to be no answer, and it is the ultimate basis of the complaint of theodicy. The counter-claims of ultimate justice – causes of seemingly unjust reward or punishment invisible to humans, balancing of accounts later or in a reincarnation or in an afterlife – seem lame too. If justice is invisible it is also unjust, and justice later is too late since for the intervening time injustice is allowed to exist. So we are left perplex.

Even when we see two equally good men unequally treated, one rewarded as he deserves and the other given better than he deserves, or two equally bad men unequally mistreated, our sense of justice is piqued. All the more so when the one with more free gifts is less deserving than the one with less free gifts. And all the more so still when the bad is not only not punished but given gifts and the good not only not rewarded but mistreated. For then all effort toward the good and away from the bad is devaluated and rendered vain. If there is no logic in the system of payment, then what incentives have we? Certainly, the resultant effect is not to marvel at the love and mercy of the payer, but rather at the injustice and lack of love that such chaotic distribution implies.

Perhaps then we should ask – what is good and what is bad? Perhaps it is our misconception of these things that gives us a false sense that injustice roams the world. The way to answer that is to turn the question around, and ask: should we construct our concepts of good and bad empirically, by simply judging as good all actions which seem to result in rewards and bad all actions which seem to result in punishment (the 'market' value of good or bad)? Such a pragmatic approach (which some people find convenient, until they bear the brunt of it themselves) is surely contrary to humanity's intuitions. For in such case, criminals become defenders of justice (*justiciers*) and victimization should always be a source of rejoicing for us. This is the antithesis of morality, which is based on human compassion towards those who suffer indignities and indignation towards those who commit indecencies. These intuitions must be respected and supported, against all claims of religion or ideology or special interests.

Some say there are no innocent victims – implying (for example) that even those who perished in the Holocaust must have been guilty of some *commensurate* crime, in a previous lifetime if not in the current one. Some say there are no culprits – for instance, many Buddhists apparently hold this view, with reference to karmic law. These propositions are two sides of the same coin. As soon as you have a doctrine of perfect justice, divine or natural, you stumble into this pitfall. Only by admitting the

imperfection of justice in the world can we become sensitive to the undeserved sufferings of people (others' or one's own).

5. The Formlessness of God

Finally, I would like to share an insight I recently had at the synagogue, an aspect of "emptiness" not previously discussed by me. The God of Judaism, and more broadly of similarly monotheistic religions, is absolutely ***formless*** – which means, devoid of any shape or form, devoid of any sensible or phenomenal characteristics. (More precisely, this God is conceived as *having* no phenomenal characters, but as quite able to *produce* them.) How then is He to be at all known by us mere mortals?

Standing in worship, I gratefully realize that I am not projecting any *image* of God, since I have none, none having been taught or allowed to me. The God that I (as a Jew) celebrate is formless, very similar in that respect to the "emptiness" presumed by Buddhists to be the root and essence of all existence. Observing myself thinking of God, I note an effort of "intuition," an intention to see through the material and mental world of appearance and to some degree apprehend the formless Existent that I assume to be present.

Thus, "knowledge" of God by us is based on an analogy or a generalization, from the intuition of one's own self. By abstraction from my own self, I can conceive of other people's selves and of the Self of God. If we attribute to God powers like cognition, volition and valuation and affection, in their extreme forms (as omniscience, omnipotence, and perfect justice and mercy, utter kindness), it is because we have inner consciousness of such powers (in miniature degrees) in ourselves. Our philosophical concept of God is not a conceptual construction derived from experience of Nature, i.e. based on *phenomenal* appearances and *causation*, but a product of introspection.

Some might argue that just as our soul has or inhabits a body, God may well inhabit the world (pantheism, animism) or be incarnated in it in human form (Hinduism, some branches of Buddhism, and Christianity have this belief) or be symbolized and represented by inanimate images, i.e. statues or drawings (this is called idolatry by Judaism, Islam and some branches of Christianity).

According to those who reject it, the fault of ***idolatry*** (the word is etymologically rooted in Gr. *eidos* = form) is to ignore the inner source of concepts of divinity, and to misdirect people's attention onto physical or mental images, i.e. on phenomenal characters. Just as it is foolish to identify oneself with one's body or imaginations, so God cannot be equated to or known through a form. Granting theism (which of course remains open to debate), the psychological advantage of monotheism is precisely its focus on the formless.

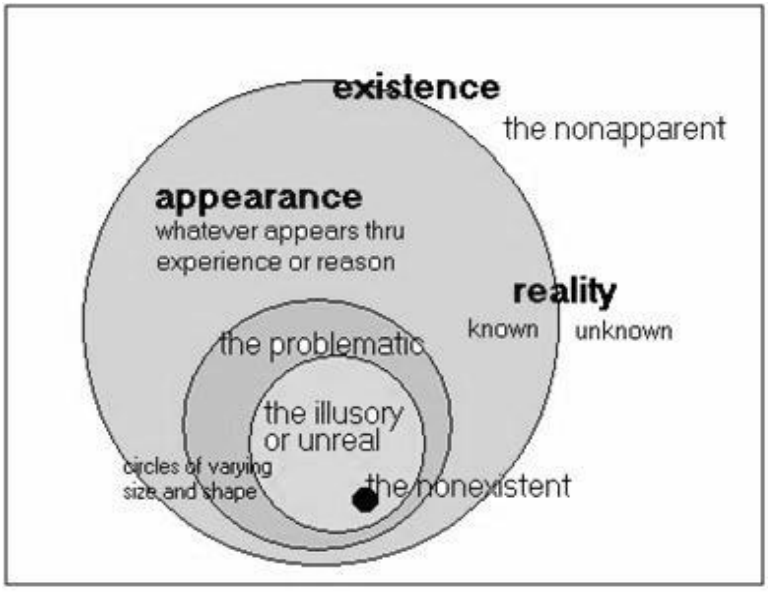
With regard to the concept of ***incarnation*** of God, which is central to many developed religions, I personally find it unconscionable: I do not see how the immensity of God can simultaneously *be* (and not merely *project* into the world) someone or something so small as a person or an inanimate form. Consider too our tiny size relative to that of the universe; and speculate on the possible infinitesimal size of our universe relative to the infinity of its Creator. Conversely, the apotheosis or deification of a human or animal is in my view unthinkable: a part cannot become the whole. But of course, that may just be my Jewish education; each one is free to think as they see fit. I am not interested in promoting religious intolerance or conflicts, but only seek to clarify concepts and debate issues as a philosopher.

What I want to point out here is that the analogy between God and human soul is commonly regarded as having limits. For whereas most theists (though not necessarily animists or pantheists) consider God as creating the material and mental natural world, most believers in a human soul do not consider that soul as *creating* the body associated with it. The soul may be assumed an outcome of the body (as in naturalism, where soul cannot exist without body) and/or an inhabitant of it (as in certain religions, where soul may leave body), with some degree of control over the body and influence from the body, but it is not assumed to produce the body. On the other hand, one of the main reasons that God is posited, in the monotheistic world-view (rightly or wrongly), is to fulfill the role of first cause and prime mover of the natural world.

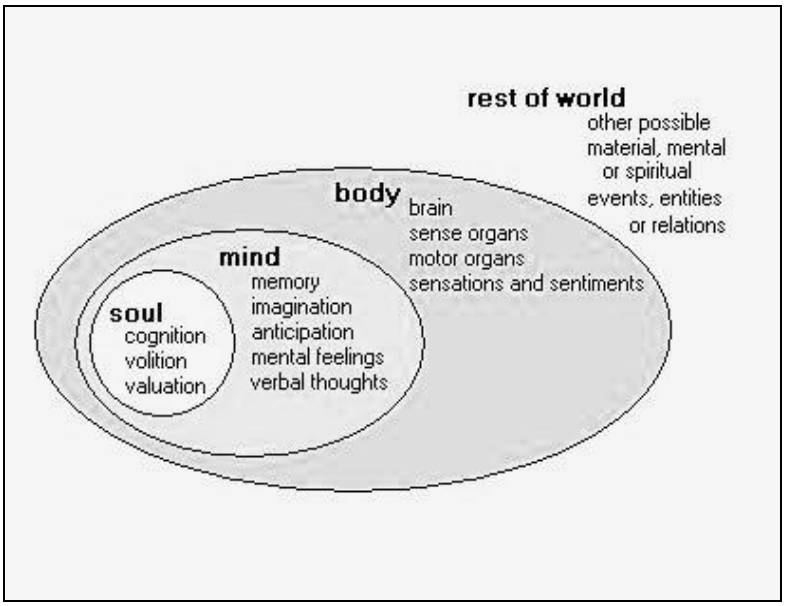
All such discussions are of course considered irrelevant by naturalists, many Buddhists, and other atheists. But rather than come to some doctrinaire conclusion on topics so speculative, I think the important thing is to keep an open mind and focus on comprehending all aspects, nuances and options.

10. Illustrations

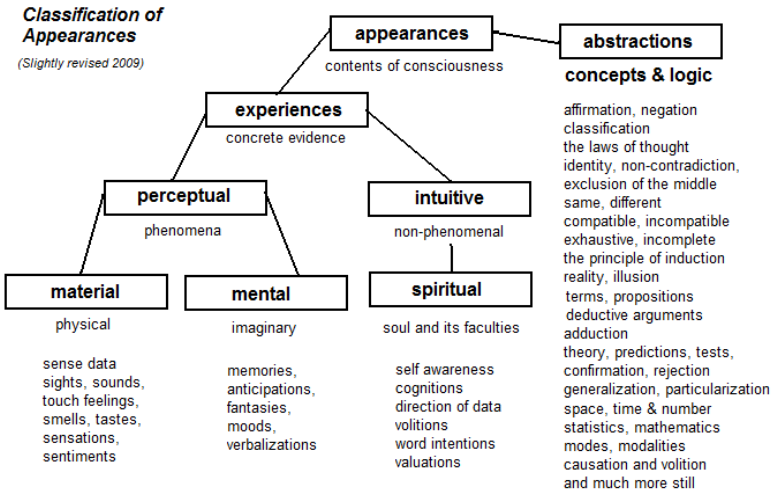
1. Existence, appearance, and reality



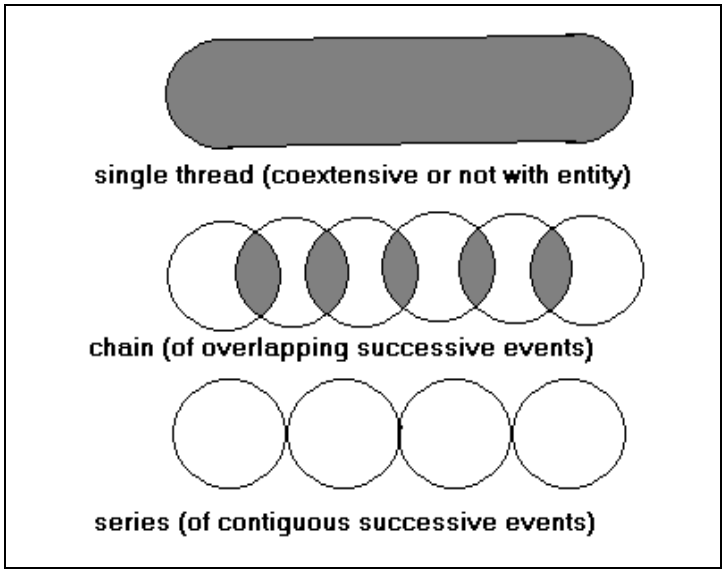
2. Assumed material, mental and spiritual domains



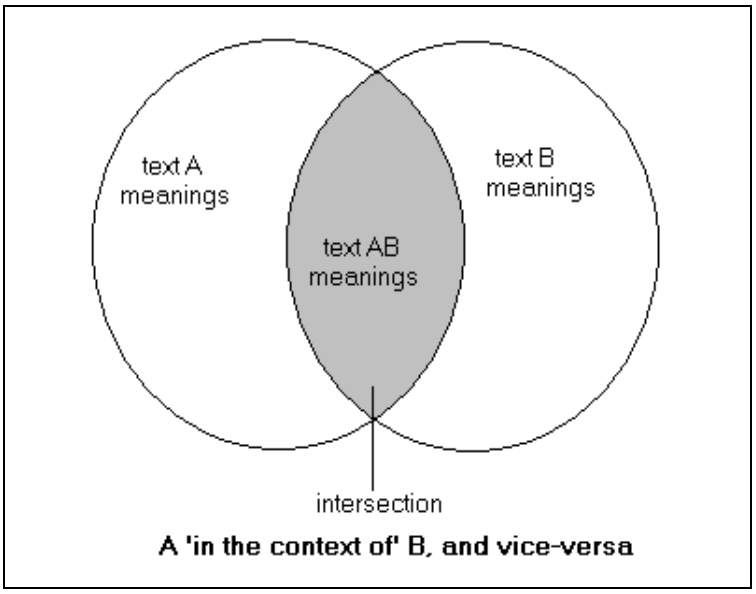
3. A classification of appearances



4. Three types of continuity



5. Contextual meaning



Appendices and References

1. Using Meditation

In the present essay[1], my purpose is to introduce the reader to what is meant by 'meditation' and how the practice of such introspection affects one's philosophical positions. I illustrate below how phenomenological insights may be generated by means of observations and reflections during or after meditation. The conversations below are not intended as lessons in meditation. They were not made in a single sitting, but over many sessions[2]. Of course, the result of my own meditations is not merely what is written below, but the whole of the present book. Many of the issues treated in it were really raised, clarified and resolved by such meditations.

Meditation is to a great many people something unknown or that smacks of mysticism. But, as the sample discourse below demonstrates, what goes on during meditation – in this case, the technique of '**breath-awareness**' – is very down to earth and accessible to all. One is not turned into a zombie, but remains quite conscious and even active. Meditation for philosophical purposes obviously involves curiosity, asking questions, seeking answers. Notice the kind of detail one looks out for, and the kind of information one can draw from it. An effort is required, but the emphasis is on observation and memory, rather than on conversation (which can be done later).

> I sometimes find it hard at first to get focused on the breath. So to try and generate and hold my attention, I may ask myself what my purpose and belief in doing it might be. But a mercantile attitude is counterproductive. One may think, to begin with, "I want to now meditate on my breathing," so as to set oneself on course and avoid mental dispersion, but one should not hang on to this thought thereafter.
>
> In general, meditation teachers recommend that we avoid using meditation as a means to an end rather than an end in itself. We are advised to go 'above' a mere pursuit of psychic rest, calm, serenity (which is what I often seem content with nowadays), or as here of philosophical knowledge (which can get nervous and verbose), or even of the greater ambitions of 'illumination' (the promise of oriental traditions that meditation leads to a radical review of reality).
>
> This is also true with reference to a particular object of meditation, such as the breath. If I view breath-awareness merely as a technique (akin to a meaningless *mantra* or *mandala*) that will hopefully propel me into concentration and *samadhi*, then my interest in the breath itself is artificial. I therefore try to think of the breath as something special, on a biological and possibly on a metaphysical level (yogis regard it as in itself revealing as to the 'nature of reality').

The secret of success in breath-awareness meditation is to *enjoy* it. This is not meant in the sense of taking pleasure in it, but in the sense of having aroused one's interest in it. Then one is able to patiently watch one's breath *in all its details*, and persevere in this without especial effort for more than a brief while.

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1 These reflections were written in 1998, and recently edited a bit for this publication.

2 For the record, my own first practice of meditation was in 1979, *zazen* with a Japanese monk known as Roshi who had a center on the Mount of Olives in Jerusalem. I remember once so exasperating this gentle teacher with my fidgeting during a sitting that he lost his cool and shouted at me: "DON'TA MOVE!!!" Over the next few years, I was taught some excellent yoga meditation techniques, including the lotus pose, *pratyahara* (accepting pain and other disturbances), inner silence and breath awareness, but all told practiced little. It is only in the last few years that my interest has intensified, and I practice a sort of Zen meditation daily. I cannot honestly claim to be very advanced!

Breath-awareness is primarily a *tactile* meditation, in that I feel my body parts moving or the impact of air in different parts of my nostrils. Of course, one may experience other sensations, such as smells or sounds coming from the environment, or be subject to all sorts of imaginations and thoughts, but as one's concentration on the breath increases all these tend to fall away. Also, the end result of breath-awareness is more mental than physical.

There is, at first or sometimes, an allied sound component, in that I *hear* the sound of air passing through my nose; but as my state-of-mind gets to be calmer, my breath gets to be less and less noisy, till I cannot rely on its sound at all to remain aware of it, but must concentrate on the touch and motion aspects purely.

An error in such meditation is to accompany each in-breath or out-breath with an *internal sound* (i.e. a sound in the head, a mental sound). It is *as if* the will needs to 'play a tune' or 'sing a song' for the breath to happen. This is evidence that you are not observing natural breath, but are interfering with your will, and you do so in such case by mimicking the sound of breath, as a means of producing breath.

I currently meditate with my eyes closed, to limit sensory inputs and get more inward. But if I consider the experience with eyes open, certain visual factors must be added to the above. Primarily, I *see* the movement of my body with the breath (rise and fall of my chest).

Also, I *visualize* the breath going in and out of my nose[3] and/or my abdomen. Such mental seeing or imaging is perhaps less strong with eyes open than with eyes closed. But in any case it constitutes the equivalent in the realm of the visual, to the inner sound mentioned above. This too is an error of meditation, in that the will is interfering with the phenomenon, artificially adding things to it.

However, upon reflection, I must temper the above remarks on errors of meditation.

First, to say that such internally generated sounds and sights can themselves be taken as *objects of meditation*. If one can stop them dead by willpower, so well and good: the meditation is made easier by being limited to natural objects. Often this is not feasible, and one must let the mind gradually calm down: in such case, creations of the will are to be accepted as a kind of natural object among others, and observed without being perturbed, without 'fighting' them.

Secondly, it must be noted that such inner auditory and visual appearances may not-be the work of a perverse will. They may simply be a biological necessity, having to do with the *correlation between sense-modalities*. To the tactile sensations of breathing, in the absence of corresponding physical sounds one needs mental sound substitutes, and in the absence of corresponding physical sights one needs mental image substitutes. Such equivalences may be a natural product, a sort of ongoing 'dictionary' translating experiences in the one sense-modality into experiences in the other.

But I must add that in my experience this parallelism evaporates after awhile (in some cases it is absent from the start, in some cases it comes and goes); so it cannot be an absolute need, but rather simply a tendency; i.e. we must admit that pure tactile experiences are possible, without visual-auditory accompaniments whether physical or mental.

Also, the impression that the will is involved is often, though admittedly not always, quite marked; so we must not generalize either way, i.e. mental events are sometimes willed and sometimes not.

Third, it should be noted that some yogic meditations involve visualization or auditory imagination[4] as positive *techniques*, aids to meditation. Some such techniques may be inventions of charlatans, but I can claim personal experience of effective methods (e.g. in *ajapa jap*[5], imagining 'psychic' breath going from

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3 It is worth recording that there are at least two perspectives for visualizing breath travel in the nostrils. The rougher way consists in 'seeing' the breath from the point of view of an observer placed slightly *on the side*. As my meditation progresses, I am instead 'looking' *down the tubes* of my nose, as if I am placed at their confluence (the "third eye" location?).

4 I would like to propose the term "auditorization" for imagination of sounds (just as "visualization" is used for imagination of sights).

5 I am referring here to Dynamic Meditation (and more advanced Kriya Yoga techniques) as taught in the Scandinavian Yoga and Meditation School by Swami Janakananda Saraswati and his disciples Swami Nityabodhananda (my first wife, Nina) and Hari Prem. For information, I am just an amateur occasional practitioner of these techniques, having in the past attended a few courses with those teachers.

the *muladhara* energy center to that of *agya* and back, and sounding *so* and *hum* as it does so). It follows that interference of the will cannot be regarded as automatically faulty, but may be used constructively.

In this context we must note that at least some Buddhists seem to regard the willed/mental and natural/external as ultimately one and the same. Their difference is an illusion; everything is ultimately mental or everything is ultimately physical, the distinction becomes meaningless. This may be an experience at deeper intensities of meditation or it may be a theory that seemed fitting to certain metaphysicians. In any case, it calls upon us to temper our reaction to the interference of will in meditation.

When I sit in meditation, I find it is best to 'gradually become aware of the breath' (as my teachers have taught me). For if I turn my attention to my breathing too suddenly, I produce a stir in it, it loses its natural regularity somewhat and becomes uneven. It is as if, almost inevitably, when we call upon our cognitive power, we awaken uncalled-for volitions. I infer that turning one's attention is a very fine act of volition; if done heavy-handedly, the volition is too strong and has an impact on the object[6]. That is a defeat of the starting intention, to concentrate on the breath.

We must therefore learn, by trial and error, to be more delicate, and will just enough for pure cognition and not so much as to affect its object. The modification of the object may consist in addition or suppression or a combination of both (alteration). The infusion of imaginary sounds or sights are examples. A more extreme example is *thought* about the breath, which may totally erase all perceptual awareness of the breath and carry us into some long discourse involving verbal and dream elements, which may after awhile have nothing to do with the original object of meditation (our breathing here and now).

This brings us into the complexities of conflict between thought and meditation. Ideally, meditation is free of the interference of thought; it is empty-minded, serene observation. In practice, one has often to contend with all sorts of mental disturbances, and the trick then is to somehow get into a position of observer of these ongoing thoughts. Perhaps the way into the observer's role is not so much to place oneself *above*, but to reserve a little place (a modest fraction of self) *adjacent* to the turbulent events. A commanding position is not easy to get into; all we need is to gain a foothold, to obtain a small observation platform. One should not fight the thinking or hope to smother the thoughts, but accept them and try only to at the same time be accepted by them as a curious spectator. After a while, thought may fade away, as if shy to be seen.

The above needs some further clarifications. The interference of will occurs especially when I try using the breath-counting technique proposed by certain Buddhists. This technique is useful, to force your attention on the breath immediately, after which you can hold it there more easily. It happens that such counting becomes divorced from the awareness of breath, but that is not the main problem. Rather, the disadvantage of such counting is that one usually (with very rare exception) gets involved in control of the breath.

a) To make the breath *more noticeable*, one intensifies it or exaggerates it.
b) There is also a tendency to *lengthen* one's breath, so as to make it healthier and calmer.
c) To fit it into one's counting, one tries to make it *more regular*, i.e. to make each breath as a whole equal in length to the preceding (even if the in and out breaths are of unequal lengths).
d) These distortions in tactile mode are exacerbated by inner sounds and sights that parallel the willed breath, helping to form it and direct it.

One must also avoid opposite reactions to these distortions, like trying to make one's breath more natural by making it *un*even! The goal is always to observe the breath as it is, in as much detail as possible. If the breath is unnoticeable, that *absence* is good enough to observe.

6 It is a bit like the problem raised by Heisenberg with reference to physical observations.

For these reasons, I have personally stopped using the breath-counting method (though I am of course free to use it occasionally if I feel like it[7]). I find it wiser to just let my mind calm down by itself, and then gradually become aware of my breath. This does not always work, it depends on my energetic state (how rested and well-fed I am, and so forth); but this dependence exists with the other method too. It seems illogical to me to disturb my mind in an attempt to calm it; it is like trying to stop turbulences in water or air by waving your arms about. Though sometimes, admittedly, jogging a bit improves one's walking.

What ultimately makes breath noticeable and natural is the increased concentration on it one eventually acquires. At first, one is 'distant' from one's breath; later, with skill, one is right there 'in the midst' of it. The sense of 'physical' distance between the observer and the observed is an expression of *mental* distance from one's meditation. As one's concentration on the breath increases, one feels oneself (the observer) to be placed in the nose or in the chest or solar plexus, where the breath (the observed) is being watched.

Watching carefully, one notices the differences between incoming and outgoing breaths. In my case (other people may differ), my in-breath seems usually somewhat rougher, louder and shorter than the out-breath. The former is more physical; the latter is more mental. Furthermore, one should note the differences in air intake or outflow between the two nostrils. In my case, these are partly due to a broken nose; but yoga teaches us that the use of our nostrils vary with the time of day, for instance.

Note well the above remarks are not intended as a guide to meditation. My own favorite guide is: Shunryu Suzuki's ***Zen Mind, Beginner's Mind*** (NY and Tokyo: Weatherhill, 1973).

2. Feelings of Emptiness

There is another sense of the term "emptiness" to consider, one not unrelated to the senses previously discussed. We all have some experience of *emotional* emptiness.

One of the most interesting and impressive contributions to psychology by Buddhism, in my view, is its emphasis on the *vague enervations* we commonly feel, such as discomfort, restlessness or doubt, as important motives of human action. Something seems to be wanting, missing, urging us to do something about it.

> These negative emotions, which I label feelings of emptiness, are a cause or expression of *samsaric* states of mind. This pejorative sense of "emptiness" is not to be confused with the contrary "emptiness" identified with *nirvana*. However, they may be related, in that the emotions in question may be essentially a sort of vertigo upon glimpsing the void.[8]

Most people often feel this "hole" inside themselves, an unpleasant inner vacuity or hunger, and pass much of their time desperately trying to shake it off, frantically looking for palliatives. At worst, they may feel like "a non-entity", devoid of personal identity. Different people (or a person at different times) may respond to this lack of identity, or moments of boredom, impatience, dissatisfaction or uncertainty, in different ways. (Other factors come into play, which determine just which way.)

> Many look for useless distractions, calling it "killing time"; others indulge in self-destructive activities. Some get the munchies; others smoke cigarettes, drink liquor or take drugs. Some watch TV; others talk a lot and say nothing; others still, prefer shopping or shoplifting. Some get angry,

7 There may well be times when we are simply unable to calm our thoughts without use of such a technique. Just because I personally at this time find it more intrusive than helpful does not allow me to discard it for all times.

8 These emotions are classified as forms of "suffering" (*dukkha*) and "delusion" (*moha*). According to Buddhist commentators, instead of floating with natural confidence on the "original ground" of consciousness as it appears, a sort panic occurs giving rise to efforts to establish more concrete foundations. To achieve this end, we resort to sensory, sensual, sentimental or even sensational pursuits.

> and pick a quarrel with their spouse or neighbors, just to have something to do, something to rant and rave about; others get into political violence or start a war. Some get melancholic, and complain of loneliness or unhappiness; others speak of failure, depression or anxiety. Some masturbate; others have sex with everyone; others rape someone. Some start worrying about their physical health; others go to a psychiatrist. Some become sports fanatics; others get entangled in consuming psychological, philosophical, spiritual or religious pursuits. Some become workaholics; others sleep all day or try to sink into oblivion somehow. And so on.

As this partial and disorderly catalogue shows, everything we consider stupidity or sin, all the ills of our psyche and society, or most or many, could be attributed to this vague, often "subconsciously" experienced, negative emotion of emptiness and our urge to "cure" it however we can. We stir up desires, antipathies or anxieties, compulsions, obsessions or depression, in a bid to comprehend and smother this suffering of felt emptiness. We furnish our time with thoughts like: "I think I am falling in love" or "this guy really bugs me" or "what am I going to do about this or that?" or "I have to do (or not to do) so and so". It is all indeed "much ado about nothing".

If we generalize from many such momentary feelings, we may come to the conclusion that "life has no meaning". That, to quote William Shakespeare:

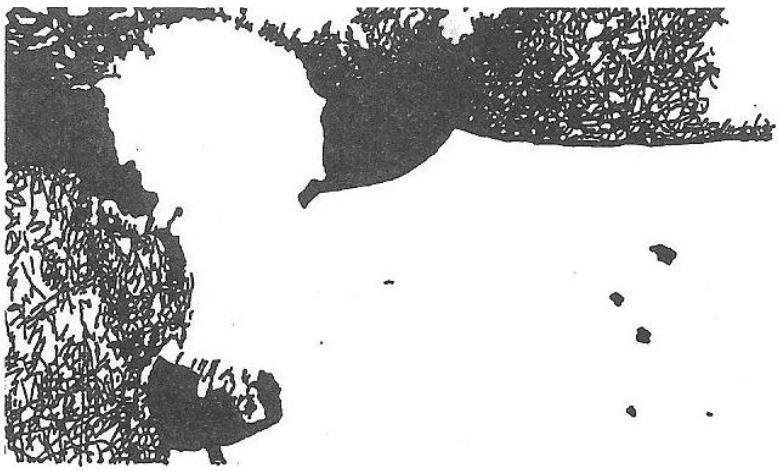
> *Life's but a walking shadow, a poor player*
> *That struts and frets his hour upon the stage*
> *And then is heard no more: it is a tale*
> *Told by an idiot, full of sound and fury,*
> *Signifying nothing.*
>
> Macbeth (act V, scene 5).

Of course, we can and often do also react more positively, and give our life more constructive meaning. I believe this becomes possible *once we are able to recognize this internal vacuum when we feel it*, and make sure we do not react to it in any of the negative ways we unconsciously tend to react. Once we understand that this feeling of emptiness cannot be overcome by such foolish means, we can begin to look for ways to enjoy life, through personal growth, healthy activities, helping others, learning, creativity, productiveness, and so forth.

Regular meditation is a good remedy. Sitting quietly for long periods daily makes it easier to become and remain aware of emotional emptiness when it appears. Putting such recurring bad feelings into perspective gradually frees us from them. They just seem fleeting, weak and irrelevant. Life then becomes a celebration of time: we profit from the little time we have in it to make something nice out of it.

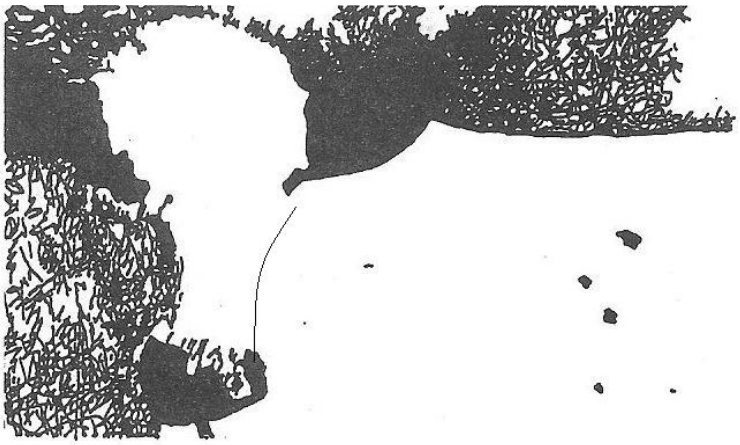
3. Mental Projection

The following illustration is drawn from *Buddhism Plain and Simple* by Steve Hagen (London: Penguin, 1997), being there reprinted from *The Ape That Spoke* by John McCrone (UK: Macmillan, 1990).



MYSTERIOUS FIGURE

Now, Hagen (p. 28) asks us to look at this picture and try and see what it illustrates. At first sight, it may look to you like a reclining figure - it did to me. But it is in fact something else (as made clear overleaf). Hagen's point in showing this is that something may seem very mysterious till you "get it" – but once you *see it* for what it is, it becomes obvious. He keeps repeating this "seeing" verb throughout his book, implying that enlightenment is like this – a sudden *seeing* of what was always there.



MYSTERIOUS FIGURE - REVEALED !

While I understand his point about enlightenment, and I assume this is the way it occurs, his interpretation of the mental process of recognizing the cow is highly debatable. It is not a mystical event of "seeing", but *a mental projection* of a dividing line that forms the face of the cow, as done in the above retouched illustration. Such projections, as I argue in the present volume, are crucial to our construction of knowledge from experience.

(2009)

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5. About This Book

This volume comprises essays on phenomenology and related topics, written in the years 1990, 1997-8 and 2002-3 (and expanded 2004-5).

My interest in phenomenology dates from the very beginning of my interest in philosophy. I was to start with, like everyone else at first, a "naïve realist" – until on a winter's day in 1970-1, in a cheap flat in Montreal, when the full weight of the critique of that Lockean posture by Descartes, Hume and Kant struck me. Soon after, I realized that the answer to such doubts was simply that 'reality' and 'illusion' have a common ground – namely, that they both appear – and many things can be thought and said about things already on this level, that of 'appearance,' prior to any judgment as to whether that which has appeared is real or illusory. This insight has stayed with me ever since, protecting me against all sorts of silly philosophies. It was an important theme of my doctoral dissertation, Future Logic, many years later (in 1990).

In 1997-8, being unemployed, I followed various courses at Geneva University. Courses in philosophy, linguistics, psychology and astronomy. Some of the lecturers taught me new things; others caused indignation in me for the errors they passed on to their students. In either case, I wrote more notes, and some of these have ended up as part of this book. Another stimulant for this book was my increased personal interest in meditation in the last few years. This revived a long dormant interest in Buddhism. Writing Judaic Logic (1995) caused my thinking on religious issues to mature greatly, so that I could no longer read any text without being vigorously critical. So in 2002, reading a text on the "logic" of Nagarjuna, I was naturally confident and strong enough to quickly and easily produce my Buddhist Illogic. Simultaneously, I wrote the main chapters of the present book, bringing my writing on phenomenological questions in line with my current thinking.

The patient reader will surely find some important philosophical insights in the present volume. One general recommendation, dear reader, read my footnotes – they are, in my way of writing, an integral part of the text!

> Much of my writing starts in the way of handwritten notes on scrap paper. A stray thought, a reflection while reading a book or after a verbal exchange with someone, is hastily committed to paper, knowing I will not remember it long. How many times have I lost what seemed like 'the answer to everything' because I took too long to put it in writing! The small slips pile up over the years, some apparently containing very important insights, others perhaps a mere word worth using one day. Once in a while, I will sort these notes into different folders, without regard to their temporal sequence but with reference to their main subject-matter – "general logic," "causation," "phenomenology," or whatever. Occasionally, suddenly inspired or intent on discipline, I take up one or two of these folders, and start transcribing the notes into my computer. Of course, the original note is telegraphic in style, limited by the size of the piece of paper it was written on. The moment I transcribe a sentence, it grows. I naturally start developing the discussion, reviewing the initial thought more critically, expanding upon it. More notes are brought to bear. And thus an essay is born. When I have accumulated a set of essays, these in turn have to be harmonized before they make up a book. This task again stimulates an intellectual effort, further research, thinking a bit more about some topics, restructuring texts.

VOLITION AND ALLIED CAUSAL CONCEPTS

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Abstract

Volition and Allied Causal Concepts is a work of aetiology and metapsychology. Aetiology is the branch of philosophy and logic devoted to the study of causality (the cause-effect relation) in all its forms; and metapsychology is the study of the basic concepts common to all psychological discourse, most of which are causal.

Volition (or free will) is to be distinguished from causation and natural spontaneity. The latter categories, i.e. deterministic causality and its negation, have been treated in a separate work, *The Logic of Causation*. Volition may be characterized as personal causality, a relation between an agent (the self or soul) and his actions (acts of will). Unlike causation, this relation cannot be entirely defined using conditional (if–then) propositions. Although we can say that the agent is a sine qua non of his actions, we cannot say that the agent is invariably (in all or specific circumstances) followed by his actions. It appears that both an act of will and its negation remain possible to a soul in any given set of circumstances. This defines freedom of the will, and implies the responsibility of the agent for his actions. Introspection provides knowledge of particular acts of will.

The existence of freewill implies a distinction between necessary causation (determinism independent of volition) and inertial causation (determinism, except when some contrary will interferes). An act of will occurs on a spiritual plane. It may have natural (mental or physical) consequences; those that inevitably follow it may be regarded as directly willed, whereas those that vary according to circumstances must be considered indirectly willed. Volition presupposes some degree of consciousness. So-called involuntary acts of will involve a minimum of attention, whereas mindful acts are fully conscious. Even pure whim involves intention. Most volitions moreover involve valuation, some sort of projection of goals, deliberation on means, choice and decision. To judge responsibility, various distinctions are called for, like that between intentional, incidental and accidental consequences.

Volitional action can be affected through the terms and conditions of the world surrounding its agent, but also more intimately through the **influence** of concrete or abstract aspects of that world that the subject has cognized. The causal concept of influence, and its implication of cognition (of inner or outer information, including emotions), are crucial to measuring the effort involved in volition. Influences make willing easier or harder, yet do not curtail its essential freedom. All the causal concepts used in psychological explanation – affections, appetites, instincts, habits, obsessions, compulsions, urges and impulses – can be elucidated thanks to this important finding. Much of human (and animal) behavior can thus be both acknowledged as volitional and as variously influenced.

Volition and Allied Causal Concepts is a work of ambitious scope, intent on finally resolving philosophical and logical issues that have always impeded progress in psychology. It clarifies the structure and workings of the psyche, facilitating hygienic and therapeutic endeavors. The relation between volition and physical laws is discussed, as is the place of volition in biology. Concepts used in biology, analogous to that of purpose, are incidentally analyzed. Theological issues are also dealt with, as are some topics in ethics and law.

"And the Lord said to Qayin [Cain]:

Why art thou angry? and why art thou crestfallen?
If thou doest well, shalt thou not be accepted?
and if thou doest not well, sin crouches at the door,
and to thee shall be his desire.

Yet thou mayest rule over him."

Genesis 4:6-7. The Jerusalem Bible (Jerusalem: Koren, 1992).

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1. Basic Causal Relations

1. Causation and volition

By the term ***Causality***, we refer to the relation between a *cause* and an *effect*. Without attempting from the outset to define the causal relation, which we apparently all have some sort of insight into, we may nevertheless notionally distinguish two primary and radically different expressions of it, or genera, which we shall call Causation and Volition. The study of these matters may be labeled 'aetiology'.

Causality is, note well, *a relation* of some sort between two or more individual things or kinds of things[1]. If two things are not related by causation or volition, they are said to be 'not causally related' – without intention to exclude the possibility that each might have one or the other causal relation to certain other things. The notion of Spontaneity, which refers to events thought to be uncaused by *anything* else, will be considered later.

'Causation' is the term that we shall apply to *deterministic causality*, which may be loosely described as the causal relation between 'natural' things, qualities or events, which 'makes' them, individually or collectively, behave with certain regularities of conjunction or separation. A cause in causation may be called a 'causative'.

This *natural* form of causality is definable with relative ease, *with reference to conditional propositions* of various types and forms. We tacitly understand the different forms of natural, temporal, extensional and logical conditioning as being expressions of an underlying 'bond', which we label causality, or more specifically causation. The patterns of behavior of things are empirically, and then inductively or deductively, identifiable[2]; the underlying causal 'bond' is a widespread intuitive assumption which requires much philosophical work to elucidate and validate.

The idea of causation may be viewed as arising from the three 'laws of thought', insofar as the latter establish the fundamental "if–then" relations, as in "if X, then X" (identity), "if X, then not notX" (non-contradiction) and "if not X, then notX" (exclusion of a middle), which mean "X and notX together are impossible" and "not X and not notX together are impossible". For, once such relations are found to exist in the world and in discourse, i.e. in all the modes of modality, with regard to any term X and its negation notX, it becomes conceivable that similar relations may be observed to exist *in less obvious* cases, between certain other pairs of terms, like X and Y.

'Volition' is the term we shall apply to *indeterministic causality*, which may be loosely described as the causal relation between an agent and any action thereof, i.e. between a 'person' (be it God[3], a human being or an animal)

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[1] The Latin root *causa* refers to a purpose or motive, but I am not sure what its deeper etymology might be. A related Latin term is *causari*, meaning quarrel or dispute. Related terms in French are *une cause* (a court case), *causer* (to converse) and maybe *chose* (thing); in a legal context, the thing that causes, i.e. the cause, is sought through discussion about it. The etymological issue is just one aspect of the history of *the concept* of cause in all its guises, which has yet to be written.

[2] See my work *Future Logic*, parts III and IV, for a thorough analysis of conditioning.

[3] Some readers may find my occasional references to God in this work, as in my others, as misplaced. In this day and age, any reference to God is considered by many as necessarily apologetic and prejudiced. But I insist, the present is *a secular and rational work of philosophy*. I simply refuse to be intimidated by ignorant pseudo-philosophers, who tell the masses that atheism is an established fact of 'science'. I consider myself a philosopher in the ancient and high tradition, which admits of no such fashionable dogma. In this context, *theology* is admitted as a legitimate and noble field of open philosophical debate, in which theism and atheism are both given voice and must both argue their case rationally, though both may remain forever equally speculative. In my view, people who claim that atheism is scientific are as epistemologically contemptible as those who claim knowledge of the Divine by ordinary experience and reasoning. The role of philosophy here is merely to eliminate certain incoherent ideas, and so limit the field to a more limited number of respectable ones. Beyond that, all beliefs (including the atheistic) are personal faiths.

and his[4] will (be it a personal attitude or a mental or physical motion of some sort). Note well that in volition per se, the 'cause' is the one who wills (at the precise time of willing), an entity called the agent or actor or doer, and the 'effect' is a specific act of will by that agent immediately, or thereafter more remotely any product thereof (which may or not have been intended).

This *personal* form of causality is far less easy to define. The simplest approach is by negation – to affirm that there is a causal 'bond' of some sort, while denying that it takes the form of natural, temporal, extensional or logical conditioning. Thus, volition refers to behavior which does not display fixed patterns, but in which we all nevertheless intuit a punctual causality. Indeed, we ought to say that the notion of a 'bond' is primarily due to the inner sense of will; it is then by analogy broadened, to include the 'bonds' between events external to the will. This seems true for the individual, and presumably in the history of thought[5].

The development of this fundamental, common notion of causal bond from the will to natural events proceeds as follows: whatever remains evidently unaffected by our efforts, no matter what anyone wills, is regarded as naturally 'stuck together' or 'connected'. Thus, whereas volition may be defined in part by denial of the forms of natural causality (conditioning), causation is in turn defined in part by denial of the power of personal causality.[6]

Natural or deterministic causality displays patterns, accessible directly or indirectly by empirical means (they proceed from concrete perceptions, which are then generalized; or inferences from such), but its underlying bonding aspect is known only by analogy, as a conceptual development. Personal or indeterministic causality, on the other hand, is grasped first empirically (in the way of an intuited abstraction, through an inner 'sense' of oneself willing), and then formally distinguished by denial of ultimate invariability.

Note again that causality is essentially *a relation*. Since we do not perceive the relation but only at best its terms, it is not phenomenal; i.e. it has no material sensible qualities or mental equivalents of such. It is apprehended by us, as already suggested, through intuition during acts of volition, and inferred by analogy (a conceptual act) to exist similarly in causation. It is thus better characterized as an abstraction.

The statistical aspect of causation – and, by negation, that in volition – is secondary, though also a relational aspect. The latter is ontologically a mere expression of the relation, and epistemologically a way for us to discern and classify the causality. Whether the underlying relation is, or ought to be believed to be, a real 'substance', or whether it is a convenient projection of the imagination, is a moot question. But pragmatically speaking it is not very important, if at all possible, to find the answer.

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[4] I will use the pronoun 'he', for the sake of brevity and readability, in a general sense, meaning He (God), he/she (a human being) or it (an animal) – i.e. any 'person', any entity capable of being an agent, who has the power of will. I do not by this terminology intend to express an opinion as to whether all animals have 'personality'; perhaps only the higher animals do, but not insects or bacteria. I only wish to make allowance for the possibility, not exclude it offhand. Likewise, with regard to God – I do not, by mentioning Him, intend to express religious views. Even in the case of humans, no doctrine is intended here that all their actions are volitional. (Animists, by the way, would regard even stones as having some measure of will; some 19th Cent. German philosophers spoke romantically of the Will as a sort of general force of Nature.) Our essential object of study, here, is the abstract fact of volition or agency, and not so much its particular (real or assumed) concretizations. All this will become clear later when we discuss the natural limits of volition.

[5] It does seem – though much research would be needed to establish it indubitably as historical fact – that mankind initially explained (as of when it sought explanations) all natural motions anthropomorphically with reference to volition rather than causation. That seems to be one thrust of animist belief, which projects local spirits, genies or gods into rivers, the soil, fire, the sky and other objects (including abstract ones, by the way – e.g. assigning a spirit to the tribe) to explain their movements. Magic and ritual were used to tame or at least deflect these 'forces of nature'. Modern philosophers, of course, are trying to do the opposite, i.e. to somehow explain volition with reference to causation or some similarly impersonal process. Nevertheless, traces of underlying 'naturism' unconsciously subsist in the common reference, even in scientific discourse, to a personified Nature that 'does' things as if it has 'ends' and that makes 'laws'. This can also be viewed as a sort of secularized theism, which masks its identity by seeming to de-personify God. Of course, even the concepts of spirit and will are not innate; they must have a long and complex history, within and before mankind. Since their emergence probably antedates oral or written works of religion, philosophy or literature, we must examine archeological evidence (such as prehistoric funerary practices or ritual objects) to guess when and how they may have developed.

[6] Pitting Nature and Persons against each other, as it were: if the former wins, we have causation; if the latter, we have volition.

An interesting distinction between deterministic and indeterministic causality is that individual connections are known in the former case solely *by virtue of* general connections, whereas in the latter case they are known *per se*.

- That is to say, causation involves natural laws or uniformities[7]: it is from our knowledge that one *kind of* thing causes another *kind of* thing that we know that an *instance* of the first kind of thing has caused an *instance* of the second kind of thing.[8]
- In contrast, in volition we cannot refer to induced or deduced generalities of that sort to establish a causal connection between agent and will, since by definition such connection is always *singular and unpredictable*.[9]

As with any other concept, the concept of will ought not be regarded as devoid of terms and conditions ("terms" here referring to the ontological identities of the surrounding entities, and "conditions" to their current temporal and spatial alignments, and their states and motions). The indeterminism of volition is always bound and circumscribed by the determinism of certain terms and conditions, i.e. by causative factors. A power of volition does not mean omnipotence, total power to do just anything; it is an allowance for a limited range of two or more possible effects, whose cause is not a causative but an agent. The oft-used expression "causes and conditions" is usually intended to mean "volitions and causations", i.e. volitional causes and surrounding causative conditions.

Volition seems closely allied to consciousness. The range of an organism's volitional powers apparently depends on the range of its powers of cognition. Animals with simple organs of sensation have simple organs of movement. More complex sensory systems allow for proportionately more complex motor systems.

Evidently, each entity has its own 'nature', its own naturally given facilities and constraints, to be actualized directly or indirectly. For each entity, some things are 'willable', but some are not. Some things can be willed in certain circumstances, but not in others. Some things are easily willed at a given time, while at other times only with great difficulty.

Different species have different ranges in relation to each activity. Man can do things flies cannot, like invent a rocket to the moon. Flies can do things men cannot, like fly around without machines. Similarly, within each species, individuals vary in their range. I can do things you cannot do, however much you try, and vice-versa; though we also have many abilities in common. Yet even these common powers may differ slightly: you can perhaps run faster than I, etc.

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[7] The insight that causation concerns kinds rather than instances may be attributed to Hart and Honoré; at least, I learned it from their work. It explains why the reasoning "*post hoc, ergo propter hoc*" (after this, therefore because of this) is fallacious: it is just *too hasty*. We do infer (inductively, by generalization) kinds from instances, before inferring (deductively, syllogistically) instances from kinds – but we must always remain aware of possible exceptions (inductive evidence for particularization).

[8] It would be erroneous to infer that every individual causative relation presupposes a universal one: the proposition "this X causes Y" seems superficially singular; but in practice, it means that the individual entity X always causes the *kind of* event Y (when it encounters some unstated *kind of* entity or circumstance, Z); for this reason, this singular form need not imply the broader "all X cause Y". But that just confirms that truly 'singular causation' is a doubtful concept. At first sight, quantity is not the essential issue in causation; if a 'universal' (or kind) has but one instance, then its causation of something else might also be singular! But the issue is: how would we know about it? Are propositions of the form "if this singular event, then that other singular event; if *not* this singular event, then *not* that singular event" knowable? All we would have, surely, is an observation of the presence of this and that together, preceded and followed by an observation of the absence of both. Such conjunctions would not suffice to construct conditional propositions, which refer to *negations of* conjunctions! (For logicians, I would add: material implications are unknowable except through strict implications.)

[9] For this reason, the argument "*post hoc, ergo propter hoc*" is often used with apparent legitimacy in the field of volition (as against causation). In such cases, the underlying logic is in fact *adductive*, rather than deductive. The singular cause is assumed hypothetically, so long as it seems to fit available data – though such judgment may be reversed if new data puts it in doubt.

2. Causality and modality

'Modality' refers to attributes of relations such as: necessarily, possibly, actually, actually-not, possibly-not, impossibly, contingently, probably, improbably, which describe various degrees of being or knowing. These attributes are all interrelated in various ways; for example, impossibility is the negation of possibility. They are also all found in different contexts, known as types or 'modes' of modality.[10]

The concept of causation is closely related to that of modality. To each type of modality, there corresponds a *mode of causation*. We can distinguish three major modes: the logical, the extensional and the natural, if under the latter head we include the spatial and temporal modes as special cases. The *logical* mode is concerned with the reasons or explanations of theses; or with inductive or deductive arguments, i.e. the inferential processes from premises to conclusions. The *extensional* mode concerns subsumption between experiential data and concepts or between different concepts, or between the relationships among them. The *natural* mode deals with the phenomenal or abstract causes or effects of physical or mental events, or kinds of events.[11]

Volition is, to be precise, to be contrasted to natural causation, rather than to logical or extensional causation. Volition is of course involved in the rational processes through which logical inference and classification occur, but we cannot will such truths or relationships into being. We can identify them, or attempt or claim to, but no amount of will can make 'true' or 'included' what is not so in fact. Volition may thus be viewed as an exception to the operation of natural causation, specifically. The mode of modality or causality applicable to volition may be called the *personal* mode.

> Some terminological conventions are worth making here, to avoid equivocations. Possibility in the natural mode may be called *potentiality*, and we can use the verb *can* in such contexts (the corresponding verb in the extensional mode would be *may*, and in the logical mode it would be *might*). In the personal mode, we may reserve the word *ability* for possibility and use the verb *is able to*; other terms we commonly use in volitional contexts are capability, capacity, potency, power. (By the way, in the ethical mode, which is a derivative of volition, we speak of *permissibility* and again use the verb *may*.[12]) Similarly for the other modalities (necessity, actuality, etc.), but no need to go into detail here.

The difference between potentiality (natural possibility) and ability (personal possibility) encapsulates the difference between causation and volition. Potentiality is actualized by natural causation, whereas ability is actualized by volition. Ability is a rather vague and ambiguous term, from a logician's point of view, because there are many levels of *readiness* for volitional acts and the term ability does not specify which one is meant. I may be able to do something in principle if I take certain steps, and yet be far from able to do it right now, without further ado. Ability understood broadly is mere empowerment in principle; it merely means that *some* way(s) exists for volition to arrive at the result concerned, without specifying the way(s). But ready ability, depending on the wording used, may signify that we have approached the result considerably; maybe so much that it is at hand, available to us at will.

3. Spontaneity

Before going further in this analysis, let us look briefly at the antithetical notion of spontaneity. In its primary sense, note well, the term 'non-causality' is a *limited* reference to the lack of connection between two *individual or specific* things, without implying that each of these specified things is not connected to *yet other* unspecified things. Two things may be completely unrelated – we commonly believe this occurs in the world, so the concept of non-causality must in any case be admitted as meaningful. 'Spontaneity' is a more radical variation on this conceptual theme, referring to things with a *general* lack of connection to anything else whatsoever.

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10 For a thorough study of this topic, see my work *Future Logic*.

11 Note: some propositions apparently mix modes of modality; but we are able to sort them out.

12 See my *Judaic Logic*, chapter 13, for the elements of ethical logic (deontology).

Spontaneity should be contrasted to natural causation, specifically. We do not regard the logical or the extensional modes as involving spontaneity. It might be argued that 'axioms' and 'experiences', the apparent irreducible primaries of knowledge, are logically spontaneous – but this would be a misuse of the term, because no variation occurs in these givens: they just are, forever factual irrespective of when they entered our knowledge. On the other hand, the concept of natural spontaneity ought not be limited physical events, but may equally be applied to mental ones.

Most people credit the idea that some things are connected together, while others are not – though they may in turn be connected to other things. Some people deny the existence of spontaneity, i.e. claim that everything is interconnected with at least some other things, whether by causation (only, for extreme determinists) or by volition. But it should be clear that the concept of spontaneity is not unthinkable: it just refers to a general denial of causal relations. Spontaneity may be regarded as occurring in *limited domains or pockets* of the world, without denying causality to exist in other levels or parts of it. Some lay people and philosophers go so far as to claim that *everything* is spontaneous, nothing is connected to anything else; but belief in spontaneity need not be taken to such nihilistic extreme.

In any case, to discuss the issue at all, we must admit of both the notions of causality and of spontaneity, to begin with. It is logically conceivable that some things are connected to *some* others, but some things are not connected to *any* others. We do not have to admit spontaneity for all things if we admit it for some. Also, it should be clear that if spontaneity is indeed possible for some particular thing in some particular region of the world, it does not follow that *just anything* may arise in that context. There may be only a certain *range* of possible spontaneous events, and nothing beyond that range. This can be understood with reference to disjunctions.

It is conceivable that "**A *must* be either B or C or D, but *cannot* be E or F, etc**." and that "**there is *no thing X such that* 'if X occurs, A is necessarily B' or 'if X occurs, A is necessarily C' or 'if X occurs, A is necessarily D'**". In such case, we can predict that *one of* B, C, or D is bound to emerge in A (to the exclusion of other thinkable alternatives E, F, etc.), and yet be unable to predict *which* one, because no causative X exists for any of them. The modalities 'must' and 'cannot' in the above propositions indicate some measure of determinism; while the expression 'or' signifies that there are alternatives and the absence of any causation for them implies some indeterminism. Thus, determinism and indeterminism may coexist; and spontaneity may be very circumscribed, and need not be unlimited.

Nowadays, the possibility of spontaneity in matter is taken very seriously. I refer to the Uncertainty Principle of Werner Heisenberg (1927), according to which the position and momentum of a subatomic particle cannot both be measured with precision. This has been interpreted as an indeterminacy principle, i.e. as having not merely epistemological but ontological significance, notably by Niels Bohr[13]. Since this physics discovery, which is apparently here to stay, we must admit that not all natural events are subject to causation; some are seemingly governed by a less extreme, merely probabilistic, form of law. This scenario must of course henceforth be taken into consideration in our philosophical and logical analysis of causality.

But keep in mind that just because we can *imagine* things popping in and out of existence without rhyme or reason, as in a Walt Disney cartoon, it does not follow that such things are in fact possible. The question may also be asked: is a universe composed of only singular happenings, devoid of any regularity whatsoever, unconnected to each other in any way, *fundamentally* different from one in which Natural Law, or God's Will, reigns? It is far from clear. Spontaneity in the sense of pure chance, or ultimate anarchy, is extremely difficult to define precisely; i.e. it is not certain that it is fully conceivable!

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[13] This is known as the Copenhagen interpretation. It should be clear that this is a case of Positivistic thinking, which could be expressed as 'let us suppose that things are only as they seem on the surface – i.e. that there is nothing deeper down them to know'. Such reasoning is used, for instance, in the Relativity theory, where no absolute rest is conceived to underlie the various relative motions we perceive. I am not rejecting such an approach here; but it should be pointed out that its intellectual respectability in modern history is rather recent, dating from the late 19th Cent. An equivalent approach with regard to the phenomena of visual perspective would say: when bodies look smaller at a distance than when they are closer to us, they really are smaller – it is not just an optical illusion.

We could say that *chaos* is the limit at infinity of 'complexity of law'. Chaos implies frequent crises in regularity, sudden and repeated changes of order. As order decreases, the mathematical formulae that are capable of expressing it increase in complexity. Perfect order is ultimately monism; the pluralism of the world implies various degrees of order. Chaos may thus imply extremely complex order, as well as no order at all. In other words, the concepts of chaos and order ultimately converge!

Moreover, spontaneity, in the sense of chance, is in a way a form of 'determinism', insofar as *what happens by 'luck' is not under the control of any volitional agent*[14]! As far as we are concerned, such events are as much out of our power as events governed by natural law – in fact more so, since the latter can at least be relied on and used, whereas the former are unpredictable (or at best probabilistic). In a world of chance, *we* are *even more passive* than in one of natural law. In other words, the concepts of causation and natural spontaneity intertwine and ultimately tend to a common – *mechanistic* – reading of the world.

There is even a strong element of spontaneity in indeterministic causality, in that the will is somehow, to some degree (indeed, to varying degrees), free and unpredictable. Thus, in some respects spontaneity is akin to causation, and in other respects it is akin to volition.

We may also, at a deeper level, claim everything as 'spontaneous' in the sense of mere happenstance. For even causative relations, as themselves objects or events in the universe, ultimately 'just are' – they are irreducible givens. We cannot conceive of an infinity of *layers* of causation; the buck has to stop somewhere – a First Cause or Prime Mover. We can only speculate as to whether the primary 'event' is Natural Law or God's Will or Chance Happening.

Another possible modern application of spontaneity is the Big Bang theory of Stephen Hawking. Whereas the previous application concerned the very small (quantum mechanics), this one concerns astronomical events: the beginning of existence. It is supposed that the universe – including matter, motion, space and time – started out of nothing some 15 billion years ago (give or take some). This thesis implies spontaneity in an even more radical sense. If physicists make such claims, then philosophers and logicians must of course give them plenty of attention.

The wise position, then, at least *ab initio*, would seem to be to accept all these concepts at face value and avoid extremist or generalizing doctrines. The mechanical realm, or causation in a wider sense, may well range from pure spontaneity, through various degrees of individual or collective probability, to 100% connection. The latter cover apparently the majority of Nature, or at least most events we encounter in our daily experience.

4. Relative vs. absolute contingency

The concept of causation, or natural/deterministic causality, ultimately implies *necessity*. This means that when we come across a causative relation that is seemingly unnecessary, it seems so only due to our failure to uncover or to specify of all the partial causes making up the complete cause. In this context, everything is in principle predictable. Such contingency may be characterized as *relative*. This is how we ordinarily conceive 'nature' to operate, i.e. the world not counting 'persons'.

On the other hand, the concept of volition, or personal/indeterministic causality, ultimately implies *contingency*. Here, contingency is meant as *absolute*. Such causal relations are punctual, singularities not being subsumed to generalities. Nevertheless, volition has its limits. As discussed further on, volition refers primarily to direct volition; indirect volition is a derivative concept, which considers the interplay of natural and personal causality. The latter explains why some acts of will do not necessarily have the desired result, without weakening the power of direct volition. As we shall also see, influence is another causal concept serving to realistically delimit volition: volition operates in an informational context, which can be modified by natural or volitional means. Though such context does not determine a person's choices, it yet plays some role in their genesis, making them easier or more difficult.

[14] Except, perhaps, God.

Our view of nature has in fact lately become more complicated, since physics (as earlier mentioned) has come to accept real indeterminacy in subatomic mechanics and truly *ex nihilo* emergence of the universe. Thus, we cannot as just attempted, distinguish nature and volition simply by saying that the former implies necessity while the latter implies contingency. We must also draw a distinction between mechanical spontaneity and personal spontaneity, though they are both classifiable as absolute contingencies. We can, at least superficially, do this with reference to 'agency', saying that natural spontaneity has no apparent agent, whereas volition has one – a conscious agent.

2. Interactions between Volition and Causation

Pursuing the analysis of causation and volition, we must consider intermediate or allied relationships which relate together these two domains of causality. For deeper description of causation, the reader is referred to my *The Logic of Causation*[1].

1. Necessity and inertia in causation

In natural causality or determinism, we must distinguish between *necessary causation* and *inertial causation*.
Our understanding of the term 'nature' refers primarily to ***necessary*** relations, such that no matter what else happens in the world, that particular sequence of two things is bound to happen, i.e. once the one arises, the other is bound to also arise. The specifics may vary from case to case, with regard to time (the sequence may be simultaneous or at a set time after or some time later), place (here, there) and other respects; but the correlation is inflexible. Most of the causative events in the world proceed thus, relentlessly, as inevitable and invariable courses of events that no other natural event and all the more no volition (or at least no human or animal volition) can prevent or in any way deviate. For example, the Sun's evolution and trajectory are de facto out of our power to interfere with.
On the other hand, it seems, some causative sequences are avoidable or subject to volitional manipulation. Such natural courses of events may be characterized as ***inertial***. They are strictly speaking *conditional* causation, i.e. sequences that are bound to occur *provided no* volitional (human or animal – or eventually Divine) intervention occurs. For example, the river Nile would have continued to flood over yearly, had people not built a dam at Aswan. Or again, closer to home, my breath continues rhythmically, if I do not willfully hold it or change its rhythm.
Thus, whereas the concept of necessary nature concerns causation alone, the concept of inertial nature refers to an interface between causation and volition. When volition does intervene in the course of nature, we say that an ***artificial*** event has replaced the inertial event. The artificial event is of course 'natural' in a larger sense – a natural potential; but it is a potential that will never actualize without volitional intervention. For example, a piece of clay will never become a pot by mere erosion.

> We would express causation in formal terms as (in its strongest determination): "**If X occurs, then Y occurs; and if X does not occur, then Y does not occur**"[2]. Weaker relations are definable with reference to compounds, replacing 'X' by 'X1 and X2 and X3...' and 'Y' by 'Y1 or Y2 or Y3...' as the case may be.[3]

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[1] The reader ought to read that book first, to fully understand the present work. At least, the summary chapters (10 and 16) should be looked at.

[2] The negative aspect of this definition is as important as the positive, note well. David Hume's reference to the "constant conjunction" between cause and effect is not by itself sufficient: absence of cause and absence of effect must also be found conjoined (in the strongest case). For a full critique of Hume's views, see my *Phenomenology*, chapter 2.5.

[3] But see my *The Logic of Causation* for precise description of all possible cases. The strongest determination is complete-necessary causation. But in addition to that, there are weaker determinations, namely complete-contingent, partial-necessary, and partial-contingent causations. Volition can be fit into any one of these as a complete or partial cause, whether necessary or contingent.

When volition ***interferes***, simply one of the causal factors – be it the whole 'X' (as rarely happens) or a part 'X1' – refers to the volitional act, and the rest 'X2', 'X3', etc. (if any) constitutes natural ingredients and forces[4], and the effect is an artificial event 'Y'. In such cases, the conditional "if X, then Y" or "if X1, plus X2 etc., then Y" is operative.

When volition ***abstains***, the preceding volitional causal factor is negated, i.e. 'not X' or 'not X1' is true, and natural causal factors come to the fore, i.e. 'X2' etc., resulting in an inertial event, 'not Y'. In such case, the conditional "if not X, then not Y" or "if notX1, plus X2 etc., then not Y" is operative.

Thus, there is nothing antinomian about causative relations involving volition at some stage. The event willed, *once willed, acts like any other* causative, complete or partial, necessary or contingent, within the causative complex concerned. The only difference being that this causative did not emerge from natural processes, but from volition.

> It should be noted that *volition, unlike causation, is not (or rather, not entirely[5]) formally definable with reference to conditional propositions*. That is the main difficulty in the concept of volition, which has baffled so many philosophers.
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> It is true that if you ask someone to demonstrate to you he has freewill, he will likely answer: "see, if I but will to move my arm, it moves; and if I decide not to, it does not". But such arguments *ad libitum* ('at his pleasure') have little weight, since the antecedents *are* the volitional events we are trying to define or at least prove, and the consequents are merely effects of them (as it happens, in this example, indirect effects, dependent on bodily conditions – but the same can be said of indirect mental effects and even of direct effects within the soul itself). Therefore, one may well object to the tested person: "what made you will to move or not move your arm?" Even if the latter attempts to preempt such objection by saying: "whatever I predict I shall will (or not-will), or you tell me to will (or not-will), I can do so", or better still: "whatever a machine randomly tells me to will (or not-will), I shall do it", one may still suppose that the instruction given by the human respondent or by the machine becomes a determining causative, rather than a mere suggestion, in the mind of the tested person. In that case, the apparent act of volition would only be a mechanical effect of such instruction.
>
> Thus, conditional propositions cannot be used to define or even prove volition, without tautology or circularity or infinite regression or paradox. This does *not* however logically imply that volition does not exist[6]. There may well be other ways to define or at least prove it. We can still minimally each refer to his intuitive experience of personal will, as source and confirmation of the concept.

Note that *the dividing line between necessity and inertia may shift over time*. Some feats are de facto out of our power one day, and later become feasible (for example, walking on the moon was until recently in fact impossible). Or the opposite may occur: something at first possible to us becomes impossible at a later time (for example, certain damages to the brain make the victim lose many cognitive and motor powers). Necessity may be permanent or temporary, acquired or lost; and so with inertia.

The '*not yet possible*' is so due to time-constraints: there may be physical, psychological or cognitive/intellectual impediments to overcome before the necessary factors can be lined up; once it occurs or is brought about, we admit it as having always been possible 'in principle' though not immediately. The '*no longer possible*' is so due to the irreversible destruction of some faculty or the erection of some impassable barrier, or to lost opportunity; what was previously possible, since the beginning of or during the existence of the entity or entities concerned, has become impossible. Thus, what is causative necessity at one time may be mere inertia at another, and vice versa.

Also, of course, the powers of different individuals of a given species, or of different species, differ. Consequently, what is necessity *relative to* one individual or species, is mere inertia to another; and vice versa. Nevertheless, at any given time and place, we can state as absolute principle either that no human or animal is in

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[4] In the case "if X, then Y", we may consider 'nature' as expressed in the if–then connection between X and Y. In the case "if X1 and X2 etc., then Y", the role of 'nature' is implied in both the other partial causes (X2, etc) and the connection.

[5] See next chapter.

[6] Contrary to the claims of philosophers such as Gilbert Ryle.

fact capable of affecting a certain natural course of events (so that that course is necessary), or that some specified individuals of some specified group have the volitional power to do so if they so choose (so that the course is inertial). The same distinction between necessity and inertia can be used to harmonize our assumptions of God's all-powerful volition and of causation in nature (see below).

With regard to the epistemological underpinning of the above ontological statements, it should be stressed that our knowledge of causation is *inductively* acquired.

The proposition "If X is followed by Y, then X causes Y" may logically be assumed to be true, especially if the X+Y combination is repeatedly found to occur, until and unless it is found that X is sometimes *not* followed by Y. In other words, the movement of thought known as *post hoc, ergo propter hoc* (meaning "after this, therefore because of this"), though deductively a fallacy, is not fallacious in itself but only in view of a larger context. The observed sequence "X is followed by Y", like any empirical datum, may be regarded as a basis for generalization, provided it is understood that the generality "X causes Y" may require eventual particularization if further experience suggests it[7]. Gradual adjustment of such generalizations allows us to identify more complex conditions and more variable causal relations.

The relationship between necessary and inertial causation is thus one of generality and (relative) particularity, respectively. They are two levels of generalization, differing only in degree. The first is an optimistic upward thrust to the extreme, yielding an apparent absolute; the second is a downward correction of that to a more relative status, in view of evident volitional access. They are both inductive; but one has remained unconditional, whereas the other has been judged conditional upon non-exercise of volition.

2. Direct and indirect volition

Another interface between the domains of volition and causation is brought out with reference to the distinction between *direct volition* and *indirect volition*. At this stage, we need only treat these terms superficially; they will be further clarified further on.

In direct volition, whether immediate or far-reaching, the effect is inevitable; i.e. that which is willed occurs irrespective of surrounding circumstances. In indirect volition, the effect is a later product of direct volition, dependent on the appropriate circumstances being present. Something directly willed may be attributed exclusively the agent, because causation is not involved in it at all; or if it is involved, it has the strongest determination, i.e. it is complete and necessary causation. Something indirectly willed has mixed parentage: although the motion in that direction is initiated by the agent, its exact course thereafter may vary according the terms and conditions it encounters in its onward journey; i.e. partial and/or contingent causation is involved somewhere along the line.

The causal relation between an agent and what he wills is, strictly speaking, direct, if what he wills automatically and invariably follows his willing it (whether immediately in time or not): the consequence is inevitable, whatever happens in nature thereafter and whatever anyone does in an attempt to interfere. Indirect volition refers to a weaker bond, which is actually a sequence of two causal events: (a) a direct volition, followed by (b) a conditional causation. In such case, the thing willed does not invariably or automatically follow the willing of it, for the simple reason that subsequent natural events or other volitions may in the meantime interfere and prevent the full realization that the volition was directed at.

As the formal notation for volition, we may use "**A wills W**", to mean "agent A wills action W", so as to abide by the familiar subject-copula-predicate schema. This is not mere convention, but serves to imply that the relationship itself ('willing') is uniform in all its occurrences, and that what gives every specific act of will its particularity is the agent doing it (A) and the direction or result of the action (W).

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[7] In terms of factorial analysis: "X causes Y" is the strongest factor of "X is followed by Y", though we may have to downgrade in the face of new evidence. Symbolically: $\mathbf{I} \rightarrow \mathbf{A_n}$ until if ever **O** appears. See my *Future Logic,* part VI. Contra Hume's allegations, this principle is undeniable, since any such denial would perforce be making use of it.

Note that although the word 'wills' is used, to explicitly indicate the involvement of will, in practice other words are of course used, in which the fact of will is tacit. The words 'do' or 'make' or 'produce', for instances, are common; but they are ambiguous in that they are not always indicative of volition. Mostly, rather than the two words "wills W", we would have a specific one-word verb in the form "*Ws*"; for examples, 'walks', 'sings', 'thinks' or 'hopes', rather than 'wills walking', 'wills hoping', etc.

We may distinguish between acts of will proper, and the absence of such acts. In more formal terms, this refers to a distinction between "**A wills notW**" and "**A does not will W**", although sometimes in practice the dividing line is moot (depending as it does on the degree of consciousness involved). These – willing and not-willing – are two significant subclasses of will in the larger sense, which we may label positive and negative will, or activity and passivity, respectively. It should be obvious that not-willing may often be viewed as an act of will of sorts, at least when our inclination is very much to act and we have to *restrain* ourselves from doing so. For this reason, logical considerations relative to will should also be applied *mutadis mutandis* to non-will – for any creature endowed with the power of volition concerned.

To say that A can will W does not necessarily mean that A can will W ***at will***, i.e. directly and immediately; it may be that A can only arrive at W indirectly and over time, ***through a process***, by stages, first willing W1 in certain specific circumstances, then willing W2 in other appropriate circumstances, and so forth… till W occurs. That is, ability in principle does not signify ability without submission to terms and conditions[8]. The distinction between direct and indirect volition can then be formally expressed as follows.

- Direct volition: "**If A wills W, then W occurs**".
- Indirect volition: "**If A wills W, and conditions X, Y, Z... (or the like) occur in conjunction, naturally or volitionally, then W occurs; but if A wills W and appropriate conditions do not also occur, then W does not occur**".

Thus, in the case of direct volition, that which the will aims at is identical with the outcome of the will ('W' in both cases). Whereas, in the case of indirect volition, the will's aim (whatever makes one call it a will of 'W') is not always identical with the produced effect, call it 'V', because the will put forth is by itself insufficient to guarantee the emergence of 'W' but does so only when and if certain surrounding factors (X, Y, Z…) are duly lined up. Whenever will stirs, it is sure to produce *some* minimal effect V (if only within the agent of it, possibly in the mental or even material surrounds); but that effect (V) may correspond to the will's aim (V=W) or may not do so (V<>W): if it necessarily does so, the volition may be classified as direct, otherwise it is indirect.[9]

Thus, to repeat, a number of partial causes give rise to W. One of those is the willing of (aimed at) W, in itself a direct volition by the agent. If this happens to find appropriate partial causes as its surrounds (X, Y, Z, … or the like), it will have indirectly produced W. Otherwise, it will produce something else that is not W. The agent may of course be able to arrive at the same goal by means of different direct volitional acts even on the same platform of conditions (and all the more so as conditions vary). For instance, one may travel from point P to point Q in a number of ways.

The required conditions may be natural factors like a functioning nervous and muscular system, or physical or mental factors (like a machine or a guidebook) caused by other acts of will by the same agent or others. So long as they affect the course of events, they are relevant to the volition and its classification as direct or indirect. The conditions may of course be necessary or contingent; i.e. there may be only one set of circumstances that make possible the result in question, or there may be many possible alternatives.

Although we often in practice regard a volition as *effectively* 'direct' if normal conditions (like a healthy body and mind, etc.) are present, *because those inanimate conditions could not without such a will produce such an effect*, strictly speaking it is of course not so if a change of conditions would obstruct or divert it in any way. The intent

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[8] We, of course, exist in a real world, with specific bounds and rules. Wishing something to be 'so' does not make it so; thinking otherwise is madness.

[9] Note that the term 'V' can be replaced by the disjunction 'V1 *or* V2 *or* V3...' in cases of indirect volition where the effect varies according to unknown or unspecified surrounding factors, i.e. when the factors X, Y, Z… mentioned in the antecedent do not cover all possible causations.

here is to stress the fundamental distinction between the *activity* of volition and the relative *passivity* of its preconditions.

3. Matter-mind and spirit

The compatibility of causation and volition (and likewise natural spontaneity) is undeniable. Nothing precludes that a bit of each exists in our world, in the way of adjacent and interacting domains. Volition is to causation like the holes in Swiss cheese. Causation may apply in most processes, with the exception of a few where volition is applicable.

The distinction between a mechanical 'agent' and an 'agent' in the sense intended within the concept of volition must be clarified. Volition is essentially active, while causation is essentially passive. When we say that an agent of volition does, acts, makes or produces something – we attach special significance to these terms based on introspection. When we use similar terms with reference to causation (e.g. to a machine), their connotation is much diluted, since in this domain everything occurs in the way of automatic reaction.

When we say of a machine, or even a plant, that it does or causes something, we mean that some quality or motion of it gives rise to some other quality or motion of it (or of something else, possibly building up a new entity thereby). But we do not literally mean that the machine or plant *itself*, even presuming some spontaneity in the coming-to-be of its qualities or motions, has achieved the result. On the other hand, in the case of volition, the person (God, human or animal) *as a unitary whole* somehow from a *static* posture initiates/originates some *change or motion* in his immediate environment, and in some cases from thence further out. It is in this sense that we will here understand the term 'agent': with the underlying concept of *responsibility.*

Whereas in causation cause and effect may be spatially and temporally, as well as conceptually, separate — in volition, the immediate act of will must be considered as occurring within or emanating out of the actor (his self, soul or spirit), and not beyond him in the surrounding mind or brain or wider nervous system or body: such eventual *consequences* of it are not entirely within the power and responsibility of the actor, but depend on other factors, as already explained.

Thus, whereas causation may be viewed as concerned essentially with sequences of events (in the large sense) within the material/physical, mental/imaginative and psychosomatic world, volition should be viewed as concerning the spiritual world and its interface or interaction with that world of causation or nature. Once volition has injected its choices into the course of nature, it (i.e. nature) carries on – but on a new course; volition thus deviates the flow of causation from another (higher or deeper) plane.

Inertias and conditions are therefore two aspects of the interaction of soul and nature. **Inertias are the way nature goes if volition does not interfere; conditions are the factors of nature that come into play when volition does interfere.** The ones occur in the absence of volition, the others in its presence. Some things (indeed most) are beyond the power of volition to affect – they are classed as within the realm of natural necessity (and possibly, in some cases, as natural spontaneity).

All of which brings us to the causal relation of *Influence*. Under this important concept, we shall (further on) more closely study the ways the agent of will may be affected by natural events or by other agents of will.

4. Conceiving Divine volition

If we conceive God as existent and omnipotent, we must regard ***all natural necessities as mere inertias relative to Him***, with the exception of logical necessities (i.e. that facts are facts, that contradictions are impossible, that there is no middle ground between existence and non-existence – and other such self-evident truths, whose contradictories are self-contradictory).

Such a premise does not hinder scientific knowledge, since all our knowledge of natural laws is ultimately based on generalizations from empirical particulars, anyway! To say that God can, if He so chooses, interfere with any natural law, does not imply that God will ever choose to do so. We can argue that it was His will to institute such

laws in the first place, even though He left Himself the possibility of exceptional interference[10]. Thus, all natural necessities relative to all us lesser beings may be considered as effectively necessities, even if we admit that they are strictly speaking inertias that could in principle be abrogated by God's will.

This position must be differentiated from the so-called Occasionalism of philosophers like Al-Ghazali (1059-1111): the latter deny natural causation in favor of universal Divine volition, whereas our position here is to reconcile the two. We do not here claim God to be the direct cause of everything that happens in the world, but only conceive Him as having the power to interfere at will although in the great majority of cases He abstains from its exercise. Al-Ghazali, a Moslem, remains commendable in having repudiated the idea of Avicenna (or Ibn Sina, 980-1037), based on Greek philosophy, that the material world was a *necessary consequence* of God, insisting instead that it was a product of God's *will*. Al-Ghazali thought he had to resort to denial of all natural causation to achieve that refutation; but as shown here, it was an excessive measure.[11]

Many thinkers have turned away from the ideas of Divine creation of and intervention in nature, by the assumption that these ideas logically implied Divine responsibility for all events in the world, denial of natural law and conflict with human freewill. However, a consistent hypothesis is possible, if we well understand the difference between natural necessity and inertia, as well as that between a direct and an indirect cause. In respect of the latter, it is worth quoting verbatim a passage of my *Buddhist Illogic*[12]:

> "It should be pointed out here that 'creation' does not simply mean causality by God of (the rest of) the universe. The presumed type of causality involved is volition, a free act of will, rather than causation. Furthermore, God is not conceived as the direct cause of everything in the universe, but merely as First Cause and Prime Mover, i.e. as the cause of its initial contents and their initial movement, as well as of the 'laws of nature' governing them. This might be taken to mean, in a modern perspective, the core matter subject to the Big Bang, the ignition of that explosion and the programming of the evolution of nature thereafter, including appearance of elementary particles, atoms of increasing complexity, stars and planets, molecules, living cells, evolution of life forms, organisms with consciousness and will, and so forth (creationism need not be considered tied to a literal Biblical scenario).
>
> Once God has willed (i.e. created) inchoate nature, it continues on its course in accordance with causation, with perhaps room for spontaneous events (as quantum mechanics suggests) and for localized acts of volition (by people, and perhaps higher animals, when they appear on the scene). As already mentioned, there are degrees of causation; and when something causes some second thing that in turn causes some third thing, it does not follow that the first thing is a cause of the third, and even in cases where it is (thus indirectly) a cause, the degree of causation involved may be diminished in comparison with the preceding link in the chain (dampening). Similarly with volition, ***the cause of a cause may be a lesser cause or not a cause at all. It is therefore inaccurate to regard a First Cause, such as God is conceived to be relative to nature, as being 'cause of everything' lumped together irrespective of process. The succession of causal events and the varieties of causal relations involved, have to be taken into consideration***.
>
> Spontaneity of physical events and freedom of individual (human or animal) volition are not in logical conflict with creation, because they still occur in an existence context created by God. God may well be the indirect cause of spontaneous or individually willed events, in the sense of making them possible, without being their direct cause, in the sense of making them necessary or actualizing them. Furthermore, to affirm creation does not logically require that we regard, as did some Greek philosophers, God as

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[10] Believers in Divine interference may distinguish between (a) ***miracles***, or manifest interference, those rare cases when interference is specifically known to us (or thought to be), and (b) ***providence***, or hidden interference, the presumed more frequent interference "behind the scenes", i.e. without our specific knowledge (though note that the two words are sometimes intended more generically, one including the other or both the same). But even when God does not interfere, He retains the power to do so; so, in such cases, He exercises restraint. Note that Judaism celebrates both open and concealed Divine interference, respectively at the festivals Pessach (for instance – see book of Exodus) and at Purim (see book of Esther).

[11] In any case, Al-Ghazali's position is not the same as David Hume's (1711-76), to whom he is often compared; the latter aims to deny all causality.

[12] See chapter 10 there. Bold italics added here for emphasis.

thereafter *forced to* let Nature follow its set course unhindered. It is conceivable that He chooses not to interfere at all; but it is equally conceivable that He chooses to interfere punctually, occasionally changing the course of things (this would be what we call 'miracle', or more broadly 'providence'), or even at some future time arresting the world altogether. His being the world's initiator need not incapacitate Him thereafter from getting further involved.

All that I have just described is *conceivable*, i.e. a consistent theory of creation, but this does not mean that it is definitely *proven*, i.e. deductively self-evident or inductively the only acceptable vision of things in the context of all available empirical data. Note well that I am not trying to give unconditional support to religious dogmas of any sort. Rather, I am reacting to the pretensions of many so-called scientists today, who (based on very simplistic ideas of causality and causal logic) claim that they have definitely *disproved* creation, or who like Nagarjuna claim that it is logically *not even thinkable*. Such dogmas are not genuine philosophy. One should never let oneself be intimidated by either priestly or academic prestige, but always remain open-minded and consider facts and arguments impartially and fairly."

5. The study of volition

To summarize our progress thus far: **aetiology** may be defined as the study of all that pertains to causality, including all sorts of cause-effect relations and their negations, mainly those above listed. Aetiology is a branch of ontology, insofar as it theoretically clarifies and defines fundamental concepts common to all the special sciences – whether physical or mental (in the natural mode), concerned with volition (the spiritual realm), or cognitive and intellectual (in the logical mode). Aetiology is also an aspect of epistemology, insofar as its other major task is to describe and validate our acquisition of such concepts.

Aetiology is thus intended both to demystify causal concepts in general and tell us how to correctly apply them and justify them in particular cases. It is a philosophical and logical science, rather than a special science, in that it is not concerned with specific terms except as data samples and didactic examples. We do not have separate terms for the studies of causation and volition, no doubt because they are rather tightly interwoven discussions.

The study of causality is necessary to our judgments in daily life and affairs, in the family and in society, in law and justice, in economics and politics, in science and history[13]. And in most domains of interest to humanity, causal judgments concern both causation and volition. Psychology and sociology are not only concerned with volition; and agriculture and technology are not only concerned with causation. Also, even though (as earlier mentioned) causation is usually associated with generalities and volition with particulars, the studies of both forms of causality require attention to particulars and aim for generalities.

When focused on volition, aetiology quickly becomes what may be labeled '**meta-psychology**', a study of the fundamentals of consciousness including volition. For it unfolds as an elucidation of the causal terms most commonly used in psychology – like habit, compulsion, obsession, inhibition, etc. Psychology, as a special science, will ask what specific things have an influence on what specific choices, and so forth. But first, we must delve into the underlying concepts: that is the task of meta-psychology. Sometimes, the dividing line between these levels of abstraction is fuzzy, and meta-psychology may spill over into psychology or vice versa.

Meta-psychology, note, like all philosophical/logical inquiries, has two interrelated aspects – one ontological (describing and classifying the object studied) and the other epistemological (how do we know it, or at least of it?).

It should be stressed that the logician's interest in and approach to psychological concepts here is theoretical and formal, rather than pragmatic and medical. We are, for instance, interested in intentional concepts like desire,

[13] Most causality theories ignore this wide application of causal judgment, concentrating on understanding the general causative propositions (such as "the kind X causes the kind Y"), which science pursues and from which particulars are supposedly obtained by subsumption. But, as Hart and Honoré have pointed out, this is often useless in practice, since we frequently in fact proceed in the opposite direction, by generalization from particular causal judgments (i.e. "this individual thing, which happens to be of kind X, caused that thing, which happens to be Y").

aversion, love, hate, indifference – with a view to capture forms of discourse like “I feel like doing X” or “I think I should do X” and working out their interrelationships and the inferences that can be drawn from them. These are basic concepts common to all particular theories of psychology.

Our purpose here is not therapeutic psychology. Nevertheless, just as epistemology, though primarily descriptive rather than prescriptive, improves our thinking, since it includes detailed study of logical arguments, so can we expect our present systematization of psychological concepts to have a beneficial, hygienic effect.

We humans (and other animals too, no doubt) are constantly bombarded by a mass of more or less conscious, changing desires and aversions, loves and hates, hopes and fears, certainties and doubts, and esthetic responses to beauty and ugliness, which pull and push us hither and thither to varying degrees, in often contradictory ways. We are also indifferent to many things, at any given time. We usually act under the influence of these our drives, though often we resist them with reference to broader or longer-term values. The study of volition is an attempt by reason to clarify and sort the data out, and bring order and consistency to them.

3. Further Analysis of Volition

1. Knowledge of volition

There is little mystery left as to how to theoretically define causation and how we get to establish it in practice. A mixture of epistemological and ontological issues is involved, which are resolved with relative ease. Causation in general may be expressed in terms of conditional propositions, or more profoundly with reference to matricial analysis. And particular causative relations can be established inductively, by observation of conjunctions and separations of events and their negations, and appropriate generalizations and particularizations.

Not so easy for volition. Many philosophers and psychologists are discouraged by the difficulties surrounding the concept of volition (or will). How is it known? How can it be defined in general? How are particular acts of will apprehended? How can we prove they belong to the agent, are his responsibility? How to conceive freedom of the will, let alone prove it? And so forth. But a thinker should not despair too early. We can gradually build up our reflection on the subject, and hope to clarify issues.

As earlier suggested, volition – unlike causation – cannot entirely be defined by means of hypothetical (if–then) propositions. However, we can *partially* delimit volition that way, as follows.

First, we focus on volition as the presumed 'causal' relation between an agent (soul) and certain events in or around him (called events of will), whatever be the exact form of that relation. That relation may intuitively be assumed to be *other than* causation, though some causation may be involved in it. A general causative statement "without an agent, there would be no volition" can be invoked to show partial involvement of causation.

Second, we point out that without that *particular* agent, those particular events would not – indeed could not – occur; they are reserved for that soul, it is irreplaceable in their genesis. This may be expressed as a conditional proposition: "**if not this particular soul, then not those particular events**". The latter just means that the agent concerned (as an individual, and not just as an instance of a kind) is a *sine qua non* of the particular events (presumed 'of will') under scrutiny.

However, while the soul is thus a necessary causative of the events, it does not causatively necessitate them, i.e. it is not a *complete* causative of them. For it is clear that, in what we call volition, the soul is not invariably followed by those events (the presumed events of will), but remains at all times – till they do occur – also compatible with their negations. That is to say, with regard to causation, the compound conditional proposition "**if this soul, not-then these events and not-then their negations**" is true[1].

However – and therein lies the mystery of volition – we intuit that the agent *alone* does somehow 'make necessary' or 'completely cause' the events concerned *when they do occur*. At that time, the proposition "if this soul, then these events" becomes effectively true, although such a change of 'natural law' is not possible under the relation called causation. Therefore, some other category of causality must be involved in such cases, which we call volition.

That is about as far as we can get into a definition by means of ordinary conditional propositions. We can delimit the concept of volition to a large extent, and clearly distinguish it from causation, but that is still not enough to fully specify its formal structure. We can, however, go further by other means, step by step, as we shall see by and by.

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[1] The "if–not-then" form of hypothetical, I remind the reader, is the exact contradictory of the "if–then" form. It simply means that the consequent "*does not follow*" the antecedent.

Certain epistemological questions can be answered readily. To begin with, as I have argued in *Phenomenology*, the raw data for the concept of volition has to be personal 'intuitions' – in the sense of direct experience, self-knowledge – of one's own particular acts of will.

Will has no phenomenal qualities: it should not be confused with its phenomenal products in the mental or material domains; volition cannot therefore be an abstraction from material or mental experiences. We evidently know introspectively – at least in some cases, when we make the effort of honest introspection – when we have willed, and what we have willed, and even the effort involved, i.e. to what degree we have willed. Such *particular* intuitions of will in the present tense give rise to the abstraction of will, i.e. the concept of volition.

Thus, the conception of volition is an ordinary inductive process, except that its experienced instances are not phenomenal percepts but intuitions. This of course does not tell us the definition of volition as a causal relation. But it does tell us that there is something to discuss and define, as in the above initial attempt.

But of course, we do not only assign volition to ourselves, but we assume it in other people (some of us assume it further in other animals[2], and also in God). Here, the thought involved is more intricate. A person knows from his own experience which externally visible actions of his are due to will (and which are not) – for example, moving one's arm (as distinct from having it moved by someone or something). Having recorded the descriptions and conditions of willed (and unwilled) externally visible actions, we can by generalization assume that, when we see the same external behavior in others, we can infer a similar internal behavior in them.

In other words, whereas with regard to ourselves, we know the cause first and thereafter observe its effects, with regard to other agents, we infer the cause from the observed effect, by analogy.

Of course, none of this implies omniscience, either of our own acts, and much less of others' acts. Sometimes, we have difficulties discerning our will – for instance, what we really wanted, or whether we acted voluntarily or involuntarily. Introspection is not always successful, especially if one has the habit of keeping one's inner life murky and inaccessible to scrutiny. Sometimes, even if one is sincere and transparent, contradictory subliminal forces are at play, causing confusion in us. All the more so, with respect to other people: we may not have all the evidence at hand allowing us to draw a conclusion. What we observe of their behavior may be only a partial picture, leaving us uncertain as to their intentions. And so forth; no need to go into detail at this stage.

Thus, it should be understood that in this field of knowledge, as in all others, our conclusions are ultimately inductive rather than deductive. We have a certain database – consisting of our own self-observations and all other information – and we use it, and our powers of imagination, to formulate and test hypotheses. The logic involved is similar to that in the natural sciences. The only difference is the nature and source of some of the data used: it is non-phenomenal and personally intuited. This is of course a significant ontological and epistemological difference, but once realized the issues are much simplified.

2. Freedom of the will

With regard to the concept of *freedom* of the will, the following can be said at the outset.

> We can roughly define freedom of the will by saying that "**agent A is '*free*' to will or not will something (say, W) in a given set of circumstances, if neither W nor notW is inevitable in those circumstances**". This of course does not define 'will' for us; but granting the term willing (or doing, in

[2] As I write, it is mid-February, and almost every day, as I drink my morning coffee, I watch a pair of magpies not ten meters away, enacting a ritual. Each in turn tears a twig off the tree they are perched on, and places it precariously on the same branch for a moment, letting it eventually fall. They are, evidently, not yet trying to build a nest; rather, they seem to be making common plans, coming to an agreement as to where they intend to do it when the time is ripe. I even once saw them rehearsing feeding, with one bird pretending to put a small nut into the other's beak. They, supposedly the same birds, actually started building their nest in late March. What I thought was rehearsal of feeding may have been that of cementing, because I saw that they bring each other what seems to be mud pellets that are stuffed between twigs. Anyone observing animals cannot but suppose they are able to imagine goals and to pursue them, as well as communicate (at least by such physical demonstrations) and cooperate (effectively sharing duties).

the sense of volition) understood, its freedom is relatively definable. Note that strictly speaking it is the agent who is free, not his will.

This definition is rough, in that it does not tell us how we are to know that under *the exact same* conditions, either event W or notW is potential – since conditions are *in fact never* identical again. However, this is an epistemological issue regarding the degree of empiricism of our knowledge of freedom. We can suggest that we have intimate knowledge (intuition) of our freedom as well as of our volition; or we may propose that freedom is known more hypothetically, by way of extrapolation from *approximately* similar conditions, i.e. by adduction. The former would be direct, particular knowledge; the latter, indirect, general knowledge.

A way to distinguish causation and volition is with reference to *identity*. In causation, the cause is viewed as being 'caused to cause' the effects it causes, by virtue of the underlying natural characteristics or essences of the entities involved; whereas in volition, the cause is 'free' – its nature or identity does not allow a hundred percent prediction of all its actions. In comparison to a deterministic entity, what distinguishes a volitional agent is such lack of definite identity.

Even the agent of volition cannot till he acts definitely predict his own acts, for he may at the last moment 'change his mind' for some reason (or even, perhaps, for no 'reason' – in which case we characterize the will as pure *whim* or caprice). The agent of volition is distinguished by creating (some of) his own identity as he proceeds. His 'identity' at any given moment is the sum of previous such creations, but they do not fully determine his next creations, his later identity. The agent of volition has a distinctively 'open-ended' nature.

A way to express the freedom of (direct) volition is by reference to *autonomy* – that is, own (auto) lawmaking (nomy)[3]. Whereas natural objects are effectively subject *to* law, the agent of volition (to some extent, within certain natural boundaries) makes up his own laws for himself as he proceeds. These 'laws' may be ad hoc or they may have some regularity, of course. For the agent may choose to will on a *singular* basis, or may act by instituting personal *rules*, i.e. intended longer term patterns – predictable or repetitive behavior, plans, habits, etc.

We may, in the latter case, fashionably speak of self-programming. Such temporally stretched intentions may require a discipline of will to fulfill; often, however, by presetting personal conduct, we achieve an economy of effort, as comparatively less attention may be needed to perform. Many of the rules people adopt are of course collective, interpersonal promises. Some are imposed on them; still, most are ultimately self-imposed. Even when one fails to keep such personal or social promises, they may have considerable influence on action.

Perseverance of will (in the face of difficulty of some sort, over time) may be due to a series of punctual wills, or have some real continuity. Whether punctual or persistent, acts of will vary in the intensity of awareness and reflection they invest – some are the fruit of long and careful consideration (emotional or rational), others are seemingly impetuous (though often in fact merely the end product of a long gestation of more or less conscious thought).

The distinction of the freedom inherent in volition from that of chance must be stressed. Though there is an element of spontaneity in volition, it is not the blind spontaneity of chance. On the contrary, volition is in a way even more 'deterministic' than natural law, in the sense that the causal entity (agent) does not merely react into producing some effect (whatever is willed), but specifically chooses it out of two or more possibilities. Some awareness and intention is involved in all choice. At its most focused, choice is very conscious, with a clear goal in mind; the volitional act is normally purposive, it has an 'end' or, in Aristotelian language, a 'final cause'. Notwithstanding, we should not at the outset exclude the possibility of truly purposeless acts of volition, with a strict minimum of awareness.

Volition may be influenced in some direction rather than another by the agent's right or wrong view of the world in which he acts. But that influence is not determining: this is what we mean by freedom. You may coerce a man into doing what you want by threatening him with violence or other punishments, but even so, as experience shows, he can still disregard such threats, and even act in a suicidal manner. You may dangle great rewards under his nose, but he may still act seemingly against his own interests. Acts of will may equally well be rational or

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[3] The free agent is 'autonomous' – this term is of course not to be confused with 'autonomic' motor system, which means the opposite, referring to the functioning of certain organs without recourse to will. Descartes' term for autonomy is 'self-determination'.

irrational, intelligent or stupid; they may be explicable by self-interest or altruism, or be quite whimsical. Their 'logic' may be sound or faulty; i.e. logic does not definitely determine them.

Another important concept is that of *degrees of freedom*. Freedom of the will is not absolute, except perhaps for God. And even in that case, He is supposedly limited by the laws of logic, and cannot create things without identity, or that both are and are-not, or that neither are nor are-not. In the case of humans, freedom of the will varies; from time to time in any individual, and from one individual to another, according to the health and structure of his or her many faculties.

Likewise, the freedom of our will is broader than the freedom of will of other animal species in some respects, and admittedly narrower in other respects. To affirm that animals have some volition does not imply that one has to regard them as having powers of choice equal to those of humans. Each animal species has specific volitional powers, some of which may be found in other species and some not. Similarly, we suppose by extrapolation, God's will is the broadest possible of all.

But furthermore, one may have the freedom to do or not do something, and yet not have the freedom to do or not to do some *other* thing. One may have the freedom to do something conditionally, lacking it if certain conditions are not met. Some people (laymen or philosophers) are confused by the term 'freedom', thinking that freedom can only be total and unconditional! Freedom need not be viewed as limitless. We are quite able to develop a logical discourse about freewill, such that each specific freedom is predicated specifically to a given individual subject, at a given time or in given circumstances. We can then inductively generalize, and describe ranges of freedom applicable to classes of individuals, as the case may be.

Some people tend to deny volition to animals, because they confuse the issues and think volition has only one measure. Indeed, some deny volition even to humans, thinking that the concept requires absolute freedom. Not so. Each agent, according to his natural constitution, has or lacks freedom in relation to each kind of action. A duck can apparently choose to fly off or not, as you approach it; some do, some don't. But a duck cannot apparently choose to add five and six together, nor can an elephant flap its ears and fly. Likewise, humans are favored in some respects and deficient in others.

Many, or perhaps all, freedoms are also conditional. One may be free to run or stay, except in cases of extreme fear, or under hypnosis, which might exceptionally 'force' one to behave mechanically (like a zombie). Emotions normally play a role in volition as influences, but in some more extreme circumstances, they might become determining factors that paralyze freedom of the will altogether or generate automatic reactions. Likewise, one may temporarily lose certain freedoms, as when one cannot move because one is physically tied up or sick; or more permanently, as when one is deprived of a limb. In such cases, volition is temporarily or permanently lost and causation takes over.

To construct a realistic logic of volitional causality one must take all such variations into consideration; i.e. consider its intertwining with causation. Each agent has specific powers and limits, which may vary in time and according to surrounding conditions for any given individual, and which may vary from individual to individual of a species and from species to species.

3. Decision and choice

The precise relationship between consciousness and volition, or between the status of being a Subject and that of being an Agent, needs elucidation. Empirically, the two seem tied together, though it is not clear just why. Conceptually, at first sight at least, one can imagine a Subject, floating in the universe as a pure observer, unable to do anything; and likewise, perhaps, an Agent that simply wills certain things without awareness. Maybe such entities exist somewhere, but we have not encountered any.

In any case, we must keep in mind that consciousness varies in intensity or scope. An insect's consciousness (which we infer from its sense-organs and its responses to stimuli) is seemingly weak and limited; that of a bird is somewhat more elaborate; and so forth. The powers of volition of different organisms seem proportionate to their powers of consciousness.

However, some intelligent people seem weak-willed (perhaps through indecision) and some stupid people seem strong-willed (perhaps through inability to conceive alternatives). It may not be merely an issue of character flaws; there may be an issue of uneven biological development of faculties.

In humans, at least (and perhaps, though to a much lesser extent, in higher animals), acts of will are usually preceded by some thought (in the largest sense, not necessarily meaning verbal deliberation; possibly merely an imaging).

There is usually a ***decision*** (which may be wordless, to repeat), followed by a choice of one course rather than another (or than no choice). But it should be stressed that some acts of will seem virtually devoid of decision-making (this is one more sense of the concept of spontaneity); however, a minimal level of consciousness may be involved even in such cases ('without conscious decision' may simply mean without very-conscious decision).

Also, decisions do not necessarily result in corresponding acts of will. The issue, here, is not whether an effort of will is successful in producing some intended result, but what we call *will-power*, arousing one's faculty of will. Sometimes, of course, hesitation or paralysis is due to indecision, when the pros and cons of a course of action seem balanced or too full of uncertainties.

A decision may be punctual or large, specific or general. A punctual decision relates to a single act of will; but a decision may be large, in the sense of an indefinite general resolve to pursue some goal over time, through numerous acts of will yet to be intellectually determined as events unfold. For this reason, the concept of decision is distinct from that of will.

An example of such general policy is what we call 'good will', the resolve to do whatever happens to seem like the right thing at any time, and avoid doing what seems wrong; good will implies a certain openness or eagerness, which facilitates many actions. The contrary attitude is that of 'bad will', a tendency to resist doing what one is supposed to, if not to perversely prefer doing what one is not supposed to; this often makes things more difficult.[4]

What we call ***choice*** is the logical aspect of a decision – two or more alternative courses of action are open to the agent, though possibly to different degrees, i.e. requiring different expenditures of effort, and one of them is 'taken' or 'opted for'. The alternatives may simply, of course, be to do or not-do one thing; or there may literally be several contrary or combinable alternatives.

Another important aspect of decision is ***intention*** – the pursuit by the agent of some *goal or purpose*. Without intention, the agent has no 'reason' to do anything. This is why Aristotle regarded 'final causes' (intentions) as causes of motion. Intention, note, implies memory and anticipation, both of which imply consciousness. We project an image of the kind of thing we wish to attain.

In volition, purposeless motion seems virtually impossible. The purpose may just be to keep moving, or to exercise one's faculties, or to discover or demonstrate one's abilities, or to prove one can will without motive, but there seems to be need of some purpose. 'Art for art's sake' or 'spontaneous art' also have a goal of sorts, be it self-expression, beauty or humor, money or sex. Of course, the result of one's action may not be what one intended.

Non-willing entities remain essentially passive objects, even when they are causes (within the domain of causation), or the result or theater of spontaneous events (in an apparently causeless domain, one governed by chance). Whereas willing entities are truly active: they are more than objects, they are subjects and agents.

Influence is the interface between these two kinds of entity: objects impinging on subjects; or in some cases, subjects producing objects that impinge on subjects. The impact may be to stimulate, inhibit, or direct hither rather than thither, some event of will.

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[4] Note how the attitude tends to influence results. Good will gives us moral credit for trying, even if we do not succeed; and bad will tends to discredit us, even if we do succeed. Of course, often we role-play good will, to give ourselves a good conscience, or to look good in other people's eyes. Also, of course, as the saying goes: "hell is paved with good intentions", and good will cannot be taken as the sole basis of moral judgments – contrary to Kant's doctrine that the intention (to act as duty dictates) is the overriding consideration.

4. Goals and means

What we have just said about volition requiring intention shows the interdependence between meta-psychology and ethical and legal studies. In formal logic, aetiology leads to *teleology*: "**To obtain Y, X is required**" is based on "If not X, then not Y". Philosophically, consideration of intention naturally raises the question: what ought we intend – what *goals* or ends shall we pursue? Thereafter, the question arises: by what *means* may such goals be reached, i.e. what is needed or required to attain them?

Goals may be broad and long-term, or narrow and immediate. They may be consciously ordered in a consistent hierarchy, or may be a confused mix of unrelated or even contradictory directions. They may in either case, for any individual, change over time, or be doggedly adhered to. Some may be very consciously developed, others very instinctive. Our goals may be reduced to a limited number of basic goals, or standards or norms.

Means also vary greatly. They may be appropriate or inappropriate to one's goals. They must be timely, to be effective. There may be many possible means to the same goal, of which some are known and some not (or not yet). Some may be easier, some harder. Means may take time to identify, and the identification, as said, may be correct or incorrect. All these details will emerge in the course of formal analysis.

It is a common error to think that logic has nothing to say in the setting of standards for ethics or politics. The anarchist premise that 'anything goes' in these fields is logically untenable. The anarchist cannot plead against legalism, since by virtue of his advocacy of general unlimited freedom he allows for legalism; but the legalist can in all fairness frown on the anarchist without inconsistency. Thus, whereas anarchism paradoxically allows for its logical opposite, legalism – the latter logically excludes the former. It follows that anarchism is a self-inconsistent and so false thesis, while legalism is a coherent and true thesis. That is, we can in principle aspire to justifying some 'objective' norms of behavior.

> Note well *the form of norm-setting argument*; it is essentially dilemmatic: "**If X, then Y, and if not X, then Y; therefore, in any case, Y**".
>
> In this way, we can argue, for instance, that *the use of logic* (meaning: any epistemological ways and means that are demonstrably effective in increasing or improving knowledge of reality) is an absolute imperative. No matter what our norms or standards of value be, whatever the goals we pursue – to find out the means that indeed result in these desired results, we need to know reality; it follows that all aspects of scientific methodology are imperative, since they are the way the truth gets to be known, i.e. the way any intellectual issues encountered are resolved. Thus, science (in this broad, open sense) is a means common to all goals, a fundamental and general imperative.

From a biological point of view, of course, the ultimate (minimal) goal of all volitional action is or should be *survival* of the individual living organism, or at least of its descendents, or its other family or larger group members, or the species it belongs to, or life itself on earth and perhaps beyond. That is because survival is the necessary precondition, the *sine qua non* of all other pursuits.[5]

It is a minimum need; but of course, maximum health and wellbeing is preferable; and this implies realizing one's full potential, psychologically and spiritually as well as physically. In other words, our cognitive and volitional nature must be taken into account in our understanding of what we mean by 'life'.

For ethics in general, then: life, cognition and volition are three natural norms, insofar as nothing that a particular ethics might recommend can be done without these three basic values. Being relative to no norm in particular, these values are absolute for all in general.

Intention presupposes *imagination*: one imagines something not yet there and proceeds to bring it about. Such imagination of a goal presupposes an informational context, which may be realistic or unrealistic, i.e. based on knowledge or mere belief. Even if the subject's ideas on what it is possible for him to have and how it is possible for him to get it are illusory, they are influential; and they may even be efficacious! Realistic ideas are, of course, likewise influential; and in principle, and statistically, no doubt more efficacious, but they do not always or necessarily lead to success.

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[5] In more artificial perspectives (viz. certain religious, political or behavioral doctrines, like sadomasochism), survival is not essential; however, the founding arguments of such doctrines are logically very debatable.

The *motive* of an action is the thought of its goal, or perhaps more precisely, the pressure or attraction one feels towards that goal. This is stated to clarify that it is not really or directly 'the goal' that influences one's action; logically, the goal cannot do anything since it lies in the future! So rather we must refer to the *present thought of* that intended end; and even that mental image has little power, except insofar as it stirs a desire within the agent. Thus, the relation of the goal to our striving activity must be specified with reference to a motive (analogous to a force, a motor), a present influence by a mental image and the stirring it produces in us to get into action.

Note in passing that having a certain motive, and being aware of having it, and publicly admitting to having it – are three different things. Often, we conceal our real motive from ourselves or from others, and replace it with a more acceptable *pretext*. Such *rationalization* is made possible by the fact that our actions often have incidental or even accidental consequences, in addition to the goals they intended to pursue. We pretend these side effects are our 'motive', to divert attention from our effective motive, and give ourselves a good conscience or a virtuous facade.[6]

The most fundamental faculties of the soul are, in that order, cognition, volition and valuation. Cognition refers to consciousness, volition to actions, and valuation to affections and appetites. The soul has three corresponding and interdependent roles, as subject, agent and evaluator. Volition implies, and is impossible without, cognition. Valuation implies, and is impossible without, cognition and volition. With regard to goals and means: the goal is the value sought (seeking implies consciousness anticipating, note) by act(s) of will; the means is identified (rightly or wrongly) by consciousness, and is executed by the act(s) of will.

[6] The problem with such distortions of reality is that they eventually boomerang psychologically and socially. Deceiving ourselves, we lose track of the truth; deceiving others, we lose their trust.

4. Consciousness and Responsibility

1. The consciousness in volition

Volition as an inner effort of the soul requires some degree of consciousness – else it would not be volition but mechanical movement. But the question arises: 'consciousness' of what? There are several answers.

Firstly, every act of will requires some minimum amount of awareness to be at all performed. To produce a volitional act, some attention to one's inner faculties of volition has to be invested.

If all we invest is only just enough attention to perform the act in the most perfunctory manner, we call the act effectively ***unconscious*** or inattentive or mindless or involuntary, because as volitions go it is *almost* so. Note well that the negative terms used in this context are not meant as full negations, but as hyperbolic. Such conduct may be reproved as essentially lazy; for example, one may wash the dishes barely aware of what one is doing, while thinking of one hundred other things. Often, such actions are gauche and fail, because one was 'absent minded', one's 'heart was not in it'.

As we deliver more and more consciousness to our volitional faculty, the act becomes increasingly ***mindful*** or conscious, attentive or voluntary, till a peak of awareness is attained. In this case, contrary to the preceding, we are fully focused and concentrated on what we are doing; our mind is empty of extraneous thoughts, our action is pure and uncluttered. Everything we think or do is relevant to the job at hand; there is little hesitation, decisions are efficiently made, timely action proceeds. For example, a good fighter has this consciousness; whoso has experienced it knows its magic.

Note that the terms here used are sometimes mixed up in practice – so that mindful action may be called 'unconscious', meaning unconscious of irrelevant matters; we are not attaching to words but to their intended meanings. Also note, the expression 'self-conscious' is sometimes used to mean 'mindful', whereas at other times it is meant pejoratively, with reference to an interference of ego. In the latter case, we are conscious of other people looking at us, and careful to appear at our best so as to impress them; this implies a lack of self-sufficiency or self-confidence, and more important, turns our attention from the job at hand, so that we in fact lose our 'presence of mind'.

Between unconsciousness and mindfulness, as above defined, there are many degrees of awareness. Just as cognition may involve different intensities of awareness, so does volition. This distinction explains why movements requiring will may nevertheless seem almost automatic or 'involuntary' to us: it is because they have no more than the minimum awareness in them, the agent being distracted by many other things, almost absent. In the case of 'voluntary' will, the agent is by virtue of his greater presence more of a volunteer, who will therefore more readily acknowledge the action as his own.

The possibility of minimal awareness helps explain *self-programming*: once a choice of freewill is launched, its continuation has a momentum of its own, hard to stop without special dedication; this means that *more effort of consciousness and will is needed to stop it than to continue it*.

A component of what we have called mindfulness is ***awareness of the influential context***. This refers to consciousness to some degree of all the influences impinging, or seeming to impinge or possibly impinging on one's current volitional act – including attitudes, concerns, motives, goals, feelings, moods, emotions, mental images, memories, imaginations, anticipations, thoughts, arguments, bodily aches and pains, physical sights and sounds perceived, that disturb or please, distractions, obstacles, and so forth. One should also mention awareness of one's level of awareness. To the extent that one is conscious of all eventually influential factors, one's volition is lucid and efficient.

Such consciousness is of course momentary and peripheral to the volition. It serves to minimize or even dissolve negative influences, and maximize or empower influences in the direction of our will. It makes the will as free as possible, or at least freer than when unconscious. It is a preparatory act, making ready for volition, aligning its

resources, helping to focus and concentrate it. But if we exaggerate it and linger on it too long, we miss the point: instead of facilitating our volition, it confuses and interferes with our action. So, one has to know the right balance. Awareness of influences does not consist in weighing volition down with irrelevant thoughts, but on the contrary in emptying the mind of extraneous material.

> In yoga meditation, by the way, this is known as *pratyahara*. We just calmly observe internal or external disturbances. As we do so, they either cease to exist or to appear, or they at least cease to disturb us. In this way, our consciousness can settle and become more intense.

A second important aspect of consciousness in volition is its intentionality, the direction of its aim. If agent A specifically wills W, then W is what A 'has in mind' as his aim as he stirs his volition into action, i.e. W is indeed what A 'wanted to do'. In such case, we say that A ***intentionally*** or *purposely* willed W; and W is called the *object* or *purpose* of his will. If however A wills something else, of which W is a mere side effect, then we say that W was *unintended*. In the latter case, W is not the object or purpose of A's act of volition, although it is a *de facto* product of will; we label this an ***incidental*** *consequence* of will.

Note that the 'intention' of the will resides primarily in the agent, as the intelligence of his act; thereafter only, is the term applicable to the act of will or to its object. The agent is conscious of the object-to-be, and exercises will towards it.

A third way consciousness is involved in volition is through deliberation, which serves to aim will in some appropriate direction. This may be a quick, almost instantaneous thought and decision, or it may require a long process of thought, involving complex research and difficult choices, gradually 'making up one's mind'. A ***deliberate*** act is thus filled with intelligence, in contrast to an ***inadvertent*** or haphazard act. Deliberation also implies adjusting action as one proceeds, to make sure one gets it right on target.

Volition may consist of a simple act of will or a series of such acts. The degree of attention, effort and appropriateness involved in either case is a measure of the ***endeavor*** in willing, how hard we try. That A intends W does not guarantee that his endeavor is bound to result in W; he may ***succeed*** or ***fail*** to achieve his purpose. W may be an necessary consequence of A's act of will, in which case success is ***inevitable***; or W may be a contingent consequence of A's act of will, in which case failure is *possible*.

If A's intention to achieve W is strong enough, A will do all in his power to increase the chances of success and reduce those of failure. If A's endeavor is half-hearted, as we say, the chances are proportionately small. Agent A may also make no attempt to will for W, but merely *wish* for it to occur somehow; a wish may be a nice thought, but it is not will. If agent A pursues some goal W, and does not take the necessary and sufficient *precautions* to ensure success, then when failure occurs he may be said to have been *negligent*. Note that, in the case of more complex goals, success or failure may be partial; i.e. they both may result, and more or less of the one than the other.

In some cases, although A intends W, but (whether due to insufficient endeavor or circumstances beyond his control) fails to achieve it, W *happens anyway* through other causes (as an incident of some other will by A, or due to another agent's volition, or through natural causes). From the perspective of A's said intention of W, the latter cannot be regarded as success, but at best as 'lucking out'.

A fourth measure of consciousness in volition relates to knowledge of conditions and consequences.

Agent A may intend W by his will, and yet fail ***to foresee*** whether W will inevitably follow upon his act of will or merely follow 'if all goes well'. For example, he may aim an arrow in the general direction of a target, yet not be in full control of the resultant trajectory; his imperfect skill, or the bow breaking, or a sudden wind, or some unexpected obstacle, may yet impede a bull's eye hit. Thus, intention does not exclude unforeseen circumstances, nor therefore by itself guarantee success. All the more so, if W is an incidental consequence of A's will, it may be foreseen or unforeseen. In the former case, it occurs ***knowingly***; in the latter case, it is called an ***accident***.

The concepts of incidental (or unintended) and accidental (or unforeseen) consequence can further be clarified with reference to *causative chains*, as follows. Suppose P is a complete causative of Q (i.e. "if P, then Q" is true), either in all circumstances or in some given circumstances. Then, when A wills P (i.e. when A wills away with P as his intention, and indeed achieves P), Q will necessarily also follow. So, A will have *effectively* willed Q. However, if A had no interest in willing Q or even preferred to avoid Q, then Q is only an incidental consequence of A's will, not an intention of his. A may have known Q to be a necessary consequent of P; or he may not have

known it, or even may have thought notQ to be a necessary consequent of P; or he may not have thought about the issue at all. In the latter cases of ignorance, Q is just an accidental consequence of A's will.[1]

We should also distinguish between ***foreseeable*** and unforeseeable consequences (be they intentional or not). In the former case, agent A could have foreseen the consequence if he had made appropriate preliminary investigations; in the latter, not. Foreseeable consequences may be inevitable or avoidable (if avoidance should be needed). If some undesired consequence of will was foreseeable and avoidable, then its *not* having been foreseen and avoided is indicative of some failure or weakness of will, i.e. not enough effort was expended to achieve the intended result or to prevent some unintended result.

There are, of course, many degrees of ***expectation***, depending on the factual probability or improbability of the anticipated event in the circumstances considered. An unexpected event has either been unforeseen or foreseen not to happen. Whether factual expectation is great or small, or nil, it is based on belief. That is, it may be demonstrable knowledge, or it may just be more or less justifiable opinion. The latter refers to the epistemological likelihood of the event, the former to its ontological likelihood.

2. The factors of responsibility

Volition implies responsibility, which is estimated with reference to various factors and their measurements. The concept of responsibility is of course primarily aetiological. The concepts of moral and legal responsibility are more specific, since they refer to specific ethical norms or to legislation.

The important distinctions we made above, concerning consciousness, intention, deliberation, knowledge and expectation in volition, allow us to specify the measure of ***responsibility*** of the agent, the degree to which the action may be attributed to its doer, whether for moral or legal praise or blame, or (in the case of no responsibility at all) exoneration. In the case of crimes, with or without a victim, note the terms guilty or innocent used for responsibility and non-responsibility, respectively.

Agent A is *fully* responsible for event W, if W was his object of conscious will, his purpose or goal, his intention in willing, *and* a foreseeable and inevitable outcome of his actions. A is only, in one sense or another, *partly* responsible for W, in all other cases, to various degrees.

As we shall see in later chapters, influences on volition that are considered psychological, such as desires and fears, obsessions and compulsions, urges and impulses, whether operative on a conscious or subconscious level, do not ultimately diminish or remove and agent's freedom of will and so remain his responsibility.[2]

We commonly also appeal to *extenuating* or *aggravating circumstances* in estimating responsibility (whether for good or bad acts), considering the former to somewhat diminish responsibility and the latter to increase it. This concept may be understood in two ways[3]:

(a) It may refer to *terms and conditions*, which objectively affect[4] the course of events, either before or after volition, but not through cognition. For example, if a man stole bread in a society *refusing him* both work and charity, he would have an objective extenuating circumstance, granting survival is a right. By way of contrast, if a man stole bread to save money, the fact that he did so *although rich enough* to buy bread, would be an objective aggravating circumstance, since he had no need to steal.

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[1] Often, in political discourse, people accuse their opponents of bad intentions based on unintended consequences of their opponents' actions; or they credit themselves with good intentions they never in fact had.

[2] This is said to stress opposition to certain psychological theories, which seek to remove guilt by denying responsibility.

[3] Note that the examples given concern blame for wrongdoing; but we could of course equally cite cases of praise for good deeds.

[4] In the limit, if the terms and condition leave one no choice, i.e. if no volition is possible, responsibility is eliminated.

(b) Or it may refer to *influences*, which subjectively affect[5] volition, through cognition. For example, if a man witnessed a crime, but did not report it to the police because his child was threatened with retaliation if he did, he would also be able to appeal to 'extenuating circumstances'. He had a difficult choice to make between his duty to society and that to his family, and since both are generally acknowledged values, the choice he made (under the influence of the criminal's threat of violence) is understandable. On the other hand, if did not report the crime but also actively concealed it so as to avoid eventual blame for not reporting it, he would be regarded as having 'aggravating circumstances'. Here, the man not only failed as a citizen, but (influenced by some inexcusable laziness or antisocial feelings) he committed the additional crime of making the witnessed crime more difficult to discover and punish.

All the preceding factors refer to ***direct*** responsibility, of an agent for *his own* actions.

An agent may also have ***a share of direct*** responsibility in some resultant of the actions undertaken by two or more agents. If each of the individual agent's action has an identifiable portion of the resultant, it may be said to have a proportional *partial individual* responsibility for the resultant. But if the resultant is a collective outcome of all the individual contributions, such that it cannot be arithmetically divided among them, we may speak of *collective* responsibility. The latter is more difficult to apportion, though we can do so with reference to causative considerations. In practice, the distinction is sometimes moot, or both aspects may be involved. In any case, further clarification is possible with reference to individual intentions, common purposes, cooperation or confluence, degree of coordination of actions, and the like.

For example: if we refer to shares in a financial venture, the total capital is the sum of the parts, so each part-owner is responsible for that portion of the whole in the company's environmental damage, say. If capital reduction by withdrawal without replacement of one of the partners would result in proportionately less damage to the environment, then that partner may be considered to have a 'partial individual' share of responsibility. But of course, in practice, the company is not just about money input, but involves the effort, skills and intelligence of numerous people, who collectively do the work. If this or that worker or manager is removed, the others may not be able to do their job; or what they do may not result in a finished product; or operations may after a while come to a standstill. In the latter case, we have to regard each shareholder, manager and employee as having a greater or smaller part of the collective responsibility in the joint project.[6]

An agent may also have ***indirect*** responsibility in another's actions, if the former knowing of the latter was possibly able to prevent it, alone or with others, but did not try to do so, or tried to but did not make a sufficient effort to. Such responsibility is necessarily partial, implying passivity and tacit acquiescence. In most cases, this is just ordinary non-interference or tolerance, 'minding one's own business'; but in some cases, this would be called criminal negligence[7]. Note that if there is any show of dissent or disapproval, or other incipient effort of protest or opposition, one's indirect responsibility is proportionately diminished; and one may claim a share of direct responsibility in the opposite direction. Inversely, if there is any show of consent or approval, and all the more so in the case of explicit encouragement or other active involvement, then one is not merely indirectly in part responsible, but acquires a direct share.

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[5] Since influences, whether positive or negative, never abolish freedom of the will, responsibility is certainly never annulled by them.

[6] How exactly to quantify the relative weights of the partial causes making up a complete cause is a moot question. Certainly, common sense supports the notion of such quantification. In principle, we could proceed as in the physical sciences, postulating an algebraic formula linking the variables and repeatedly testing it empirically. In situations involving humans – which are less easy to reproduce identically – such an approach is not always practical. For this reason, our judgments in this issue are often tentative and approximate.

[7] One special case to consider (at least for theists) is God's indirect responsibility. According to the Judaic theory of volition, God gave humans volition by a voluntary act of withdrawal (*tsimtsum*). He chose to abstain from exercising His omnipotence, so as to make possible small pockets of individual freewill. Nevertheless, this did not annul His infinite power: He retains the capacity to overwhelm any creature's will. In that case, we may well wonder why He does not prevent horrible willful crimes, not to mention murderous natural events. Why does He not limit human powers within certain more gentle bounds, to the exclusion on principle of the most heinous deeds?

Thus, for example, during the Holocaust, history's greatest crime, the responsibility of the German population varied greatly. A very few heroically made efforts to actively or passively resist the Nazi persecution of Jews and others; these were not responsible for the genocide. Most had indirect responsibility, at least because they knowingly acquiesced. Many of the latter were additionally conscious though passive beneficiaries of the spoils. But much worse, a great many people had various degrees of direct individual or collective responsibility, having participated in the horror as conquering army, appointed mass killers, efficient bureaucrats, railway workers, death camp planners and personnel, slave-labor exploiters, poison manufacturers, etc.[8]

I should mention here the Buddhist principle that at the root of all evil attitudes and acts is a fundamental ignorance of the true nature of reality. Although rather convincing, this principle should be regarded critically. It is true that at the base of our selfish indifference or hatred towards others, disregarding or enjoying their sufferings, there is a stupid blindness to the common nature, source and destiny of all sentient beings. However, to refer only to this fundamental ignorance is to effectively exonerate those guilty of crimes. For the term 'ignorance' refers to a failure of knowledge or understanding, a paucity of consciousness – and does not include reference to volition. Yet, it is precisely through our will, our choices, that we may be held responsible and subject to moral judgment. Of course, ignorance mitigates responsibility, if we have sincerely sought wisdom. But insofar as our will is misguided by inadequate cognitive practices, we remain responsible for it.

3. Judging, and misjudging, people

What we have said thus far concerning responsibility provides some guidelines for making just judgments about people. But such judgments are no simple matter, and we all very often err in making them. Even knowing in general terms, ontologically, what constitutes responsibility, it does not follow that we are fully armed, epistemologically, against misjudgment. We shall here, in passing[9], attempt to describe some of the methods and pitfalls involved, without claiming to exhaust this vast subject.

Above all, it should be stressed that judging responsibility is a category of *factual* judgment. It is not in itself moral judgment, though evaluations may subsequently be based on it; that is, it involves no standard of value. The question posed by judgment about responsibility is "whodunit?" (who did so and so, and to what extent is he or she the doer), rather than "was the thing done good or bad?" (which is a separate issue). Of course, judging responsibly is a moral imperative – an absolute one, since whatever our norms, logic dictates we apply them realistically, and to do so we must know the truth.

The object of judgment may be oneself or other person(s). Indeed, judgment about responsibility is relevant to both the inner life and to social life. We may also use such judgment to philosophically judge God's responsibility in world events, or to determine whether one's dog or cat ate the cheese – i.e. it relates to any presumed volitional agent. However, here we shall concentrate on humans.

Assessments of responsibility depend on three factors: the facts of the case as we see them, our skill or wisdom at determining responsibility on the basis of such data, and our capacity for objectivity or fairness. Judging one's own responsibility differs from judging that of others in two important respects.

Firstly, *the empirical data* at our disposal is greater in the case of self-assessment, since we have direct cognition of our subjective states and actions, as well as perception of their mental and physical consequences. Such introspection is not infallible, since it depends on the degree and clarity of one's awareness of internal events as they occur, and on the durability of one's memory of those facts. In the case of assessing others, our database consists essentially of externally perceivable data (physical words and deeds), from which we infer (spiritual or mental) internal events by means of analogies to one's own experiences.

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[8] See for instance Paul Johnson: "The German people knew about and acquiesced in the genocide" (p. 498). Of course, not just Germans, but many other European peoples (he mentions notably the Austrians and Romanians), were actively involved; some did not collaborate but did nothing to help Jews, some resisted and did what they could to help.

[9] This section is not directly relevant to our analysis of volition at the present stage, but is nevertheless inserted as a continuation to the discussion of responsibility, dealing with some of the epistemological issues relative to that topic.

Secondly, although in principle *given certain data, the conclusions we draw from them are dependent on our conceptual framework*, and so likely to be about the same whether the object of judgment is self or any other, in practice the identity of the person judged and our *predisposition* or partiality towards that person affects our judgment considerably. For instance, if we are well disposed or sympathetic to the latter, we will make more effort to find extenuating circumstances; whereas, if badly disposed or antipathetic, our efforts will be directed at condemnation. One usually judges oneself and one's loved ones favorably, and those one dislikes as unfavorably as possible; although, to be sure, some people have masochistic tendencies, and some people do make an effort at objectivity or impartiality.

The function of self-judgment is generally attributed to a faculty called *conscience*. In truth, this concept is a mere abstract construct, though a useful one. One's conscience is not a structure separate from oneself – it is a part of one's soul (in time, rather than place) acting as judge in relation some other part of one's soul. If one is judging sincerely, with objectivity and honesty, one 'has conscience' – if our judgments are not in earnest or non-existent, one 'lacks conscience'. By judging conscientiously, one effectively gives oneself a 'conscience'. The concept extends to one's judgment of others, insofar as we are responsible for the supervision of our own intellectual faculties, including those involved in our judgments about other people.

Introspection aims at identifying subjective, mental and physical data. Subjective data includes: (a) one's volitions, velleities, or inactions; (b) one's knowledge or ignorance of something; and/or (c) one's attitudes towards someone or something, including affections and appetites, hopes, fears, and so forth. Mental data includes: one's memories, fantasies, expectations, whether expressed as phenomenal qualities (sights, sounds, etc.) or verbally, indeed all our mental projections, emotions and thoughts. Physical data here refers to sensations and sentiments appearing in the body, such as feelings of sexual arousal or indifference, or feelings of love or hate.

Subjective data is known *intuitively*, i.e. it is a direct self-knowledge, not based on phenomenal (mental or physical) data, although it may be confirmed and reinforced by such data. In practice, subjective events are not always perspicuous, so that what we assume them to be must be regarded as an inductive construct. That is, based on fleeting, vague and partial intuitions, one proceeds *by trial and error* to a firmer, clearer and fuller estimate of one's volition, knowledge or evaluation. The elements of doubt in successive intuitions are attenuated by repeated experience. Although the database is composed of direct experiences, judgment is still involved in comparing and contrasting such experiences and distilling a considered summary of them.

Additionally, we may and do infer such deeper, more subjective events (when they are not evident by intuition) from mental and physical data, on the basis of past conjunctions in experience (i.e. apparent causations). In this context, we often reason according to the format *post hoc, ergo propter hoc* (sequence, therefore consequence), proposing an adductive construct ("this sort of mental or physical phenomena seem to imply that kind of event in the soul"), which we repeatedly test with reference to all direct and indirect experiences and reasoning, maintaining our assumption so long as it seems plausible to us, and abandoning it if ever it ceases to do so.

Mental data, i.e. sights, sounds and other phenomenal qualities projected by memory or imagination or anticipation within one's mind, are known by inner perception. Physical data, is known by sensory perception, i.e. through the organs of sensation deployed in one's body, whether these organs have been stimulated by psychosomatic events (occurring in the body, due to mental causatives; e.g. anxiety feelings), physiological events (in the body, due to bodily causes; e.g. indigestion), or external events (bodies around one's own, impinging on it).

It should be stressed that these distinctions between soul, mind, body and beyond, are somewhat conventional, in that in practice events in these four domains are very tightly intertwined, and we may only assign an event to the one or the other after considerable reflection. The resultant classification of the event concerned is therefore not purely empirical data, but itself a product of conception and inductive judgment.

Judgment of others is both extroverted and introspective. It is extroverted, insofar as based on information we have directly or indirectly 'perceived' concerning the person to be judged. And it is introspective, insofar as that data is *necessarily interpreted according to one's own inner experience and its customary relation in oneself to similar externally perceivable events*. Scientific data, based on the objective observation of the behavior of many

people under similar circumstances may be brought to bear, as a third factor of judgment; but such data, note well, itself also logically falls under the preceding two categories, namely 'externally perceivable data concerning others' and 'the interpretation thereof based on one's own inner life'.

With regard to the external 'perceptions' involved – this refers to (a) the things *oneself* actually sees or hears the person judged do or say, and (b) the things that *someone else* has actually seen or heard that person do or say. The former (a) is *direct evidence*, and refers to any data (prior to any interpretation) available to one's own senses, which cannot be distorted or faked by third parties. If such data can in principle be manipulated, it should be considered with due caution, and of course regarded as open to revision. The latter (b) refers to *hearsay evidence*, which depends on the reliability of the alleged witness, who may intentionally lie for a variety of personal motives, or be too emotionally involved to distinguish fact from fantasy, or merely be a very incompetent observer.

Note that direct evidence includes *concrete evidence* of any sort, i.e. physical traces or leftovers of the past events under scrutiny, which may be considered as emanations of the person judged, still available for perception by the one judging. *Circumstantial evidence* – concerning time, place, opportunity, possible motive, and the like – can be similarly considered, although more abstract or speculative.

Also note, hearsay evidence may be *first-hand* testimony by a participant in the events, reporting his or her *own* thoughts, words and deeds; or second-hand testimony about the words and deeds (but not the thoughts) of someone else. The latter witness may be a participant testifying about *another* participant, or a bystander (a non-participant who observed without affecting events).

Obviously, the person judged may intentionally project a fictional representation of his or her external actions or inner workings; for example, a murderer may wipe off his fingerprints from the weapon used or loudly proclaim his innocence in court. This too must be taken into account when estimating data.

With regard to witnesses, obviously, the more there are of them, the more reliable their common testimony. If their testimonies converge, they corroborate each other, though conspiracies are of course possible. If their testimonies diverge, the judge would want to know why. Perhaps some partial common ground is found between them; perhaps some of the witnesses are more reliable than others.

Obviously too, even when one bases one's judgment on one's own perceptions, one must be attentive to one's competence as an observer, emotional involvement and personal interests (including financial and other advantages) in the affair; i.e. one should clearly distinguish between raw data and subsequent interpretation – no easy task!

The insight that interpreting the actions or words of others depends largely on one's own inner life and behavior patterns is very important. It means that when we judge others, we are to some extent exposing and judging ourselves. Criminals actualize certain potentials; by doing so, they reveal to all of us what we, as humans, are probably equally capable of (if not actually guilty of); for this reason, by the way, every crime is doubly so, in that it further diminishes one's self-trust and trust in others, fragmenting society. Conversely, when we project presumed motives or behaviors onto suspects, we are extrapolating these from motives or behaviors we suppose potential (if not actual) within ourselves; i.e. we are also saying something about ourselves. Thus, judgment is a two-edged sword, to be handled with care.

Judgments about responsibility are a heavy responsibility, which few manage to discharge equitably in all cases. A person may unfairly judge himself or herself, claiming undeserved credit or discredit. People may misjudge each other in the family, the workplace, the community at large, the media, and of course the courthouse. Such injustices may befall groups (e.g. religious, racial or national groups), as well as individuals. The legal principles "a person must be presumed innocent until proven guilty" and "guilt must be established beyond a reasonable doubt before condemning" are often ignored in the courtroom, and more often still outside it.

Many people lack intelligence and intellectual rigor in their everyday life and dealings, so it is not surprising to find them exercising the same stupidity and laxity when they are required to judge people. Such people liberally mentally project their delusions, fantasies and fears on those around them, lacking the training to distinguish fact from fiction. Many people (men, women and children) take pleasure in slander and talebearing, thinking that by bringing shame and disrepute on others they enhance their own status. In fact, all they do is reveal their own

foolish thoughts and their hatred: Judaism rightly compares such people to murderers, and wisely commands: "thou shalt not bear false witness against thy neighbour"[10].

Nowadays, with the advent of mass media, gossip, slander and talebearing have become an institution, a full-time livelihood! Here, certain thought patterns should be pointed out, which promote prejudice.

One is the very human tendency of *generalizing* – we take the behavior of some people in certain circumstances and assume the same behavior for other people in similar circumstances. Generalization is a legitimate process, provided it is subjected to checks and balances. The need for repeated testing and, when appropriate, particularization is true for all natural objects – but all the more so with regard to volitional agents, and in particular people. The latter, by definition, do not act in a uniform manner in the same circumstances – so in their case, generalization should be indulged in very carefully. Especially in view of the disastrous consequences of wrong judgments in this field, one cannot allow oneself to generalize *at first sight*, without due research and verification of hypotheses.

Another common tendency is that of *stereotyping* – trying to fit all human behavior in a limited number of pre-established categories. Here again, there is some epistemological basis to the process: the human mind naturally pursues categorizations, as neat summaries of information. This is an aspect of conceptualization: seeking out patterns in data, by comparing and contrasting cases. The problem lies in the need to keep an open mind and continue this process all the time, whereas people tend to get lazy and stop it when they have one, two or three such stereotypes in mind. Thereafter, all natural flexibility is lost, and the mind tries to force-fit new cases into the few, rough and ready, prior patterns, instead of modifying categories or generating new ones as and when necessary. Many people misjudge, simply because they constantly refer back to clichés that have little to do with the persons or situations under scrutiny.[11]

Erroneous generalizing and stereotyping are related, the former concerning propositions and the latter concerning terms. Both are due to the failure to practice the logical virtues of open-mindedness and empiricism, careful adaptation, clarity and precision. If one is satisfied with approximation and fixation, one is bound to judge wrongly sooner or later. Another major pitfall is, of course, emotiveness. Under the weight of an intense emotion, a real effort is required to judge correctly. And, of course, emotions are most stirred precisely when people are involved – the very circumstances when cool judgment is called for. In such situations, one must consciously remind oneself to be objective and impartial.

Note lastly that reasoning about responsibility is not just concerned with volition, but often has more to do with causation. Arguments involving if–then statements are often crucial to determinations of responsibility, or the share of it. For example, the premises "if A + B, then E" and "if A + not B, then not E" suggest the conclusion that, given A (which may in turn refer to a conjunction of causes, C + D +… etc.), B causes E and not B causes not E. By such means, we would determine that agent B, rather than potential agent(s) A, is currently responsible for effect E (although to get the full picture, we would have to also check out what happens in the absence of A)[12].

A more thorough analysis of reasoning about responsibility is outside the scope of this book. A volume on this topic, with emphasis on legal issues, which I have found very interesting and recommend, is that of Hart and Honoré.

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[10] See for instance Talmud: *Arachin* 15b. Quotation is from Torah: *Exodus* 20:13.

[11] It should be pointed out that people who judge others by stereotypes tend to adapt even their own behavior to stereotypes! They absorb a number of behavior patterns from TV, movies and novels – which are often artificial concoctions in the first place, based on the fiction writer's superficial understanding of the human psyche. When faced with a real life situation, rather than draw out an appropriate response from within their own soul, they simply apply one of the formulas they have been fed by the media. They play set roles: the rebellious protester, the macho politician, etc. Even the dialogues are standardized. The sum total of available roles and dialogues is called 'a culture'.

[12] See my *The Logic of Causation* for a full treatment of such arguments.

5. Influence and Freedom

1. Influence occurs via consciousness

An important and complex concept in causal logic, and specifically in the logic of volition, is that of *influence*. This refers to the impact on one's volitional act, before or while it occurs, of some cognized natural event(s) and/or other volition(s) by oneself or other agent(s). Note well, the agent of volition concerned must have cognized the natural event(s) and/or other volition(s) in question, for the latter to count as 'influences'. The distinguishing characteristic of influence, compared to other 'conditions' surrounding volition, is ***the intermediary of consciousness***.

The philosophical importance of this concept is due to the confusion of most people relative to the concept of freedom of the will. On the one hand, most people in practice believe the will is free somehow; on the other hand, they realize it is varyingly affected by surrounding natural events and persons. These givens seem theoretically irreconcilable because the latter is mistaken for conditioning or partial causation, whereas it is influence, a different, subtler sort of causality.

For example: a man's muscles are *conditions* affecting his volitions, in that he can *in fact* lift a certain weight with them and also in that he cannot lift more weight than they physically make possible; these same muscles however become *influences* on his volitions, only when *thinking* of their supposed limited strength he chooses another course than he would if they seemed stronger or weaker. Note well the subtle difference. Conditions and influences both *affect* actions, but not in comparable ways.

Influence is *a special kind of conditioning*, differing from an ordinary condition in that it operates specifically through the medium of consciousness, i.e. of *any kind of cognitive process*. The *influencing object* is one that has been sensed or imagined, perceived or conceived, remembered or projected, found evident or inferred, induced or deduced, or in any way thought about. *What it influences*, strictly speaking, is the Subject of such cognitions or thoughts, i.e. the eventual Agent of volition. When the agent finally 'makes up his mind' and wills something, he does so either in the direction of or against the *tendency* implied by the influence at hand.

Thus, influences imply positive or negative tendencies, temptations or spurs to voluntary action. If such tendency was in the direction of the eventual will, the will was facilitated by it; if such tendency was against the eventual will, the will had to overcome it. The agent is always free to accept or refuse to 'follow' a given influence, i.e. to 'yield' to its weight or 'resist' it.

The concept of ***effort*** refers to a degree of will. Volition is not an either-or proposition, something one switches on or off; it has degrees. Powerful will is required to overcome strong opposing influences; a weak agent is easily influenced to go against his will. Thus, we may speak of *amount of* effort involved in an act of will. If influences are favorable, the effort required to complete them is comparatively minimal. If influences are counteractive, the agent must pump proportionately more effort to get his way.

We may also view effort as a measure of the agent's responsibility, his causal contribution or ownership of the action and its outcomes. The more effort he requires, the more wholly 'his own' they are. The less effort he requires, the greater the part played in them by surrounding influences.

The ***postulate of freedom of the will*** is that an influence is never alone sufficient to produce some effect, irrespective of the will of the agent concerned. Granting surrounding conditions allow the power of will in a given case, the agent always has 'final say' to resist the tendency implied by the influence, though such resistance might require a maximum of effort. As of when conditioning occurs via consciousness, i.e. in the way of influence, *necessity does not apply*, though the effort required to overcome influence may be daunting. Wherever necessity *does* apply, one cannot say that there was possibility of will, *nor therefore* speak of influence. The subject was simply overwhelmed, proving in this case to be not an agent but a mere patient. He may have been an observer of the events, but he was in this case a passive recipient of natural forces.

If this postulate is correct, it means that consciousness of an object cannot by itself move a spiritual entity (soul, subject) to action, by way of complete causation. Though such consciousness may play a major causative part in the action, approaching one hundred percent, still the action cannot effectively occur without the final approval and participation of the spiritual entity concerned. If necessity is indeed observed occurring, then the conditioning involved was not via consciousness of the object but directly due to the object.

Note that not only an influence cannot by itself ever move an agent into action, but also – granting the possibility of pure whim – the agent can well move himself in the absence of any influences. Therefore, influence is neither sufficient nor necessary for volition.

Thus, note well, we are not here involved in verbal manipulations. Freedom of the will is a thesis, a hypothesis, concerning the causal relations possible in the domain of the spirit. Consciousness may well occur in cases where there is no volition, i.e. where causation (necessity) takes over; but when this happens, consciousness has played no part in the effect. Consciousness becomes a condition only as of when causation recedes, and a space is leftover for volition to intervene; in that event, consciousness (or its objects, through it) becomes influential, and the will remains free (to at least some extent).

All volition seems subject to some influences to some degree. This seems evident of human volition, which usually occurs in response to an apparent mental and material context, though it could be argued to be at times indifferent to all influences. Other animals, likewise, and perhaps much more so, have powers of volition subject to influence.

> With regard to God, our theoretical conception of Him by extrapolation to extremes suggests we should consider God as the quintessential 'unmoved mover', i.e. His volitions as always entirely independent of influences. That need not be taken to mean He acts without regard to anything, but rather that His power of will is so superior to influences severally or collectively that the latter are effectively negligible. A tiny drop of water cannot affect the ocean!
>
> As for the relation between God and lower volitional beings, we should consider that just as God retains the power to interfere in causative processes (i.e. to Him all natural laws are inertial rather than necessary, as earlier discussed), He retains the power to '*overwhelm*' the willpower of any creature's soul. Thus, the power of will of any limited creature is in principle always conditional upon the infinite God's continued tolerance. However, the Divine power to dominate or overwhelm lesser wills seems unused in practice (judging by our religious documents, at least[1]). Rather, God seems to *condition and/or influence* lesser wills – giving agents life or prematurely killing them, or affecting their bodily, mental or external environments, or again making items appear that (strongly or to some extent) influence them in some way. This Divine preference is assumed to stem from an ethical motive, to sustain freedom of the will and therefore personal responsibility[2].

2. Knowledge of effort, influence and freedom

Effort and influence are, clearly, derivative concepts of cognition and volition. The empirical basis of our knowledge of them is therefore the same as for cognition and volition, primarily introspection or subjective apprehension. This direct self-knowledge, which I call intuition (or apperception), concerns objects that do not *per se* have inner or outer phenomenal qualities – i.e. no shape, shading or color, no sound, no smell or taste, no touch qualities – although they may produce perceptible objects.

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[1] I make no claim to special knowledge of the Divine, of course. As a philosopher, I merely conceive possibilities, cogent hypotheses, concerning God. Here, I note that while 'overwhelming of lesser wills' would seem doctrinally consistent with the idea of God's omnipotence, it is not a doctrine stressed within Judaism and similar religions.

[2] Clearly, the problems of theodicy remain whether we assume God's action to include overpowering wills, or to be limited to conditioning and influencing. It would have mattered little to victims of the Holocaust whether God saved them by overwhelming Hitler's hate-filled will, or by killing or otherwise neutralizing him early enough.

Just as we intuit our own will, so we intuit the amount of effort we have put into it. Colloquially, we say that effort is 'felt'. 'Physical effort' is experienced as a sensation in the body; but 'mental effort', or more precisely 'spiritual effort', is a more subtle experience, which may or not give rise to discernable phenomena. Measurement of effort is therefore, of course, not exact and absolute, but rough and comparative. It depends not only on the immediate intuition, but also on personal memory of past intuitions for purposes of calibration.

If estimate of effort is inexact with regard to oneself, it is all the more so with reference to the effort of others. We can only guess it, by analogy to one's own experience and by observation of indirect indices, like (in the case of physical effects of it) the sweat on someone's brow or his facial expressions or bodily postures. Thus, as for will, knowledge of effort is generally based on adductive arguments.

It is not inconceivable that one day soon biologists succeed in measuring effort more objectively and scientifically, by means of physical instruments. Quantification of effort would then become more precise and verifiable. Such practices will of course involve adductive reasoning, an initial hypothesis that such and such detectable physiological or neurological phenomena may be interpreted as proportional to the effort of will. But in the meantime, we do have a rough yardstick in our personal experience.

Influence is a more abstract concept, not experienced or measurable directly, but constructed with reference to amounts of effort involved in willful action (making it easier or harder). An object is said to influence one's action if *its appearance* to oneself directly or indirectly affects or conditions the action, in contradistinction to an object affecting or conditioning action by *mere existence*. Note well the phenomenological differentia.

If the influence occurs only by perception of the object, it is simple, direct. If it occurs after considerable mental processing of the image of the object, it is proportionately complex, oblique. Since thought about an object perceived may have many pathways, of varying intricacy, the influence by one and the same object may be multiple, involving many theses and layers, some of which may well be conflicting. Even at the perceptual level, the various sense organs yield different aspects of the (presumably same) object. Thus, *one and the same object may give rise to many, variant influences*. We must keep this insight in mind, to avoid oversimplification in our understanding of influence and volition.

Another epistemological issue concerns our estimates of *the relative weights* of different simultaneous influences. Such estimates are based in part on generalization of personal observations (when data on conjunction and separation is available); but in large part, they are hypotheses, adhered to so long as they continue to be confirmed by our experiences of effort. Knowledge of one's own psyche is very often as tentative as that of nature, or of other people's or animals' psyches. People often think that they have 'direct insight' into, or at least 'deductive knowledge' of, inner events or relations, when in fact all they have is inductive knowledge. What is important is to realize that the latter is pretty good, quite enough.

Knowledge of freedom of the will is partly introspective, but mainly adductive. Our inner sense of freedom of will provides the occasion for the theoretical search for supporting data and postulates. We may have faith in freewill as a working hypothesis, but are still called upon to develop over the long term convincing definitions of it and arguments in its favor. The formula above proposed for freedom of the will is, I think, a good start.

The doctrine of freewill is important psychologically and socially, the foundation of morality and law. The doctrine declares our responsibility for our actions, however many and strong the forces impinging upon us may seem. Thus, a criminal cannot disclaim responsibility for his crimes, arguing he was 'driven' against his will.

We should note the doctrine's own influence on human action, by the power of suggestion: if one believes he *can* do or avoid something he is more likely to be able to do so, than if he thinks that he cannot do so no matter how much he tries. Thus, belief in freedom of the will increases one's 'freedom', and disbelief in it is an added obstacle.

3. Formal analysis of influence

It is empirically evident that the Agents of will are all conscious beings: they are Subjects. This observation suggests a fundamental feature of volition, that it is allied to and inconceivable without consciousness. Given that insight, we can better understand the mechanics of influence.

We have seen that a natural event or another agent can influence an agent in his will, by presenting to the latter *an idea* which, though it does not definitely determine or control his subsequent will, constitutes a more or less important parameter in its exercise. Note that the idea presented may be illusory, just as well as real; but insofar as it is aroused by something or someone, the latter is influential. Note also that the 'other agent' influencing one may be an earlier moment of one's own existence (as e.g., in the case of habits).

Influence is a causal relation of sorts, though a weak one since it is never determining due to the essential freedom of the willing soul. Our linguistic practices are evidence that we do consider influence to be a form of causality. We often use verbs suggesting it, e.g. 'he *caused me to* do it ' or 'he *made me* do it'. Influence involves causation, in that some object or appearance (if only partially and contingently) gives rise to some cognition or idea. We may also consider as causation the relation between the appearance, or its cognitive effect, and *the fact that* the eventual volition, if any, is 'made easier' or 'made harder' by it. But influence in itself, as a relation between the object cognized or its cognition, on the one hand, and the outcome of volition, cannot be classified as causation, nor for that matter as volition. It is another category of causality, mediating those two.

We might express influence formally as follows: let **A** be an agent, and **W** be his will at a given time. Let object **Y** be some event *naturally occurring, or willed to occur* by some agent(s) **B** (which B may include agent A at a previous time). Let content of consciousness **X** be some belief, opinion or knowledge *aroused in A by Y* (X may of course simply be Y as cognized by A, or X may have some more complicated cognitive relation to Y).

> Then, we can say "**X influences A to will W**", *provided* "**A *with* awareness of X requires *less* effort to will W, than A without awareness of X**" – that is, provided X inclines *towards* W, the will of A. If, alternatively, X inclined *away from* W, then A would need ***more*** effort to will W with X than without it, and we would say that "**X influences A *not-to* will W**".

These forms define positive and negative influence, both of which may be referred as simply 'influence', leaving the direction of influence (for or against) indefinite. If the effort requirement is exactly equal either way, there is effectively *no* influence. The amounts of effort involved are known in various ways, as earlier discussed. Note that in everyday discourse the implied forms "X inclines to W" and "X inclines away from W" are sometimes be taken as equivalent to the forms of influence, because it is tacitly understood that X was cognized by A and A willed W.

We can of course, mutadis mutandis, similarly clarify various forms of influence involving notX and/or notW as terms, such as "notX influences A to will notW".

In practice, we would consider that whatever gives rise to an influence is itself an influence. That is, the occasion of X that we have labeled Y, or its natural causatives or its volitional agent B – can all be called influences once X is so established. But, *note well*, whether that practice is strictly speaking valid needs to be discussed. The issue is a logical one, concerning causal chaining or syllogism. It is left open for now.

Thus, to review the process of influence in sequence:

a. Something (Y) natural occurs, or is made to occur through the will of some agent or agents (B, which may be or include A).
b. That occurrence (Y) comes to the attention of a subject (A), or causatively produces some physical, mental or spiritual affect in him that he becomes aware of, and possibly thinks about further (X).
c. This subject (A) then engages in some act of will (W), whether a direct volition or an indirect one.
d. And it so happens that such will (W) involved less effort for that agent (A) in the presence of that thought (X) than in its absence.
e. Then the thought (X) can be said to have positively influenced the agent (A) in so willing (W).

Note that Y and X may be one or two. If A is directly aware of Y, then it is the term of reference. If, however, A is not aware of Y, but of some effect of it labeled X, then X is the influential term. The influential term is whatever is the object of cognition, i.e. some appearance, be it real or illusory, faint or intense, far or near. The cognition involved may be sensation (then X is a physical phenomenon) or introspective perception (then X is a mental phenomenon), or even intuition. In the latter case, A is aware of prior reactions of his own soul (so X is a spiritual event). Objects of sensory perception include things observed outside or within one's body, including

visceral emotions. Mental objects include[3] memories, imaginations, and possibly mental emotions. The object of awareness may also be an abstraction (then X is a conceptual object, a term within a more or less complex thought). Usually, all these means of cognition are involved, in various combinations.

It should be remarked that the causation by Y of X is a principle to be separately established, but which need not be known to A to be operative. More interesting is the question concerning the comparison of amount of effort, involved for A to will W in the presence or absence of X. For A might well be aware of his effort while he wills W in the presence of X; but that does not tell him what effort he would feel in the absence of X! The answer is that *one does not need to be aware of the influence of something for such influence to be operative*. Consciousness is crucial, but it is the consciousness by A of X, not the consciousness by A of his effort with or without X or of the influence of X. The agent need not at all take notice of the effort expended, though his attention is likely to grow with the effort expended.

> Indeed, the agent may positively think or claim to think that something has no influence which in fact has some influence, or inversely that something which in fact has no influence has some! In such cases, note, the thought or claim must be considered as a separate, superimposed item, which may or not have a degree of influence of its own, quite apart from the fact.

The above formula is relevant only to the logician, or to whoever wishes to establish the existence of a causal relation of influence between something (X) and an agent (A) engaged in a volition (W). Just as the relation of causation, for instance between Y and X at this moment, cannot be established with one observation, but only through repeated observation over time – so with influence. We cannot say for sure that X influences A to will W with reference to any one observation, like the amount of effort in the presence of X. We must refer also to other events, such as the effort in the absence of X.

And indeed, here as with induction of causation in general, certainty is proportional to the frequency of such observations. The more often we have observed the conjunction, the more confident of a causal relation we become. *Knowledge of influence is empirical and inductive.*

Notice the relation between the object X (as cognized by A) and the amount of effort (say E, for A to will W) – it is a standard causative relation. It consists of two if–then propositions (natural hypotheticals), "if X, then effort E(X)" and "if notX, then effort E(notX)", and a comparative proposition "effort E(X) is less than effort E(notX)". Nothing special – the procedures for such knowledge are commonplace. This refers to the case of positive influence by X. In the case of negative influence by X, E(X) would be greater than E(notX); and in the case of no influence, the effort needed would be the same either way.

Of course, any calculation of effort must take into account not just one influence, but all influences currently active for or against the intended will. The total effort requirement call it E, would be the effort requirement if the will was uninfluenced by anything (E_0), plus all the additional efforts required to overcome negative influences (E_-), minus all the reduced efforts made possible by positive influences (E_+). That is, $E = E_0 + E_- - E_+$.

Effort is something the volitional agent must call forth out of himself or put forward, as a precondition to his succeeding in doing his will. Effort is known to us by inner experience; but the agent need not be conscious of his effort every time he exercises it. Nevertheless, in our definition of influence we have assumed that some effort is always involved in volition, and that its quantity varies, being greater in some circumstances than in others. Whether or not it is focused on, effort is there wherever volition occurs. Volition implies effort.

Also remember, effort is relative. The quantities of effort required for each action vary from individual to individual, and even within the lifetime of a given individual. I may find a job easier to do today than yesterday, for a variety of reasons (e.g. I no longer have a cold); and some other person may find the same job more difficult any day (being less muscular or brainy than me, say).

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[3] One could here also include telepathic communications, if we suppose that telepathy exists.

4. Incitement

We have distinguished influence from ordinary conditioning, with reference to the consciousness that mediates the cause and effect in the case of influence. We have pointed out that influences may equally be natural events or events brought about by volition or both, provided in any case the one influenced has cognized these events. Let us now consider more closely the possible interactions of different volitional agents.

One or more volitional agent(s) may impact on another in the way of ordinary conditioning, i.e. by causation. For example, a man while knocked out is tied up by others; as he awakens, he tries unsuccessfully to move his arms and legs, before becoming conscious that he is tied up. His attempt to move are acts of will, whose limited scope is not due to influence but to causation, since he did not notice the rope before trying (but rather became aware of his predicament by trying). If the man happens to be Samson or Superman, he might break the ropes on first trial: his will has overcome the man-made obstacle they present. On the other hand, if the man feels or sees the rope before trying to move, his will is then braced against the resistance of the ropes – and in that case, it is appropriate to say that influence is involved.

A subsidiary concept of influence, by one or more volitional agent(s) of another, is incitement – which may be defined as ***intentional influence***. In the case of *un*intentional or accidental influence the influencing agent(s) will something with certain purposes in mind, which do not include the goal of influencing the other agent in a certain direction; yet that other agent is indeed influenced, since he cognized that previous will or its outcomes and acted in the same direction, or against it, in relation to such cognition. We have incitement, by contrast, if the one of the goals of the influencing agent(s) was in fact to influence the other agent a certain way, interfering with his life, presenting him with some enticement or obstacle.

We may formalize incitement by means of propositions like "**X incites A to will W**". This is a specialized form of "X influences A to will W", which it implies, where X is something willed by some agent(s) B, *who intend(s)* agent A to will W. (Thus for the positive form; similarly, mutadis mutandis for the negative form and for forms with negative terms.)

Here, the will X of B could be any perceivable physical activity or product thereof, such as a push or pull, a punch or arm-lock, a gesture or speech, a written text, or whatever. Such will, note well, has to have as one of its goals the orientation of A in a certain sense. The mere awareness by B that A *might perchance* be so led does not qualify as intention; B has to *want* that result. Though A must cognize X (and that before willing W), he does *not* have to cognize any of the intentions of B. But X must in fact influence A to will W, i.e. reduce the effort needed for A to will W and thus the likelihood of his doing so. Influence without intention and intention without influence are equally inadequate to qualify for incitement. And of course, just as influence does not eliminate freedom of the will, so incitement does not.

Thus, whereas influence refers to the consciousness of the influenced agent, incitement refers to both that and the consciousness of the influencing agent(s). The concept of incitement has gray areas, with regard to who and what (and where and when) the intentions involved are aimed at. We must distinguish *specificities* of intention, ranging from general intentions to more and more defined ones. The former intend a kind of result, whereas the latter focus on a designated agent performing a precisely specified action. For example, advertisers want to sell a product to as many people as possible; but it would not be accurate to say that they incited Mr. Smith in particular to buy a particular sample of it (even on a given date in a given shop).

The most obvious case of incitement is *physical* coercion or intimidation. This may involve actual blows or incarceration, to someone or to others that this person cares for, or merely the threat of such direct or indirect physical suffering, with a view to get the victim to do or not-do something. The legal authorities may resort to such measures to protect society. Or thugs of all kinds may use them for their own selfish ends. Depending on one's courage, training and motivation, one may often resist such attempts at domination. Sometimes, individuals try to and fail; sometimes, yielding to fear of pain, they do not try at all. People usually manage to defend themselves collectively, if not individually.

Intimidation, involving the threat of force to someone or the use of it against his loved ones, is of course a *psychological* rather than physical means of incitement. Indeed, most incitement is psychological, ranging from promises of some advantage or reward to threats of some disadvantage or punishment. The promise or threat is often very tacit and vague, though sometimes explicit and defined; it may in either case be true or false. Its

content may fall under any existential category: it may be physical, psychological, spiritual, economic, social, political, or whatever.

Incitement by means of *language* in any form (gestures and sounds, speech in words, written language) is considered as special enough to be named distinctively, say as 'persuasion'[4]. We may make further distinctions with reference to the interrelation involved: 'ordering' (by an authority or superior), 'entreating' (by an equal or inferior), 'instructing' (by a teacher), 'example giving' or 'emotionally inspiring' (by a role model), 'advising' (by a friend), and so forth. Often, pressure is applied by seemingly merely giving information (true, false or uncertain), without specifying what it is in aid of; an idea is imbedded in a mind, with the likelihood that it will lead to certain desired conclusions and actions. A promised reward for a certain course of action is an 'incentive'; a promised penalty is a 'disincentive'. If an incentive turns out to have been a false promise, it was probably intended as 'bait'.

Note that in relationships of influence between two or more volitional agents, the interaction of wills may be competitive or cooperative. We should not necessarily view the influencer(s) as active and the influenced agent as passive. The agents may have conflicting or shared purposes, with or without intention to do so. They may work at cross-purposes or together, struggling or in harmony, in a variety of relations – for examples, as commercial partners or political opponents, as equal co-workers or as boss and employee or as master and slave, as parents and children or as teacher and student.

All such relations can in principle be defined by analyzing the intentions of the players involved. Some interactions are *de facto*, some are contractual, mutual agreements by word of mouth or in writing; some are more or less enforceable, some not. We see here how the whole range of human or animal social life becomes an object of aetiological study.

An important issue in this context is that of parsing *responsibility*. Volitional acts are primarily the responsibility of their agent, no matter how much they are influenced by external factors or persons, since he has free will. Nevertheless, in a more nuanced sense of the term, his responsibility may be mitigated with reference to the influences impinging on him. If something good was very easy to do, the praise in doing it is less marked than if it was difficult. If something bad was very hard to do, the blame in doing it is more marked than if it was easy. Our concern may be moral or legal.

When we consider human influences, and especially intentional ones, sharing the praise or blame is necessary, since more than one agent is involved in the result. Obviously, unintentional influence implies a lesser share of responsibility for the influencer than intentional influence (i.e. incitement). In some cases, the scenario relates to an association between two or more persons who perform some deed in common. We might then ask, who played what role, and what their mutual relationships were, to determine the hierarchies of responsibility involved. Such judgments are not based on exact science (to date). Many virtues are needed to arrive at a fair judgment, among them respect for facts, attention to detail, impartiality, the sense of justice, a pure spirit, wisdom.[5]

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[4] I use the term very broadly, including both fair persuasion and persuasion by distortion.

[5] I particularly recommend in this context the already mentioned work of Hart and Honoré.

6. Further Analysis of Influence

1. Some features of influence

We defined influence as the relationship, to the action of a volitional agent, of contents of consciousness that make his exercise of will easier or harder. To 'make easier or harder' means that: in the presence of these objects, provided one is minimally aware of them just before acting, the effort of will needed for some purpose is increased or decreased *by comparison to* that needed in their absence. If they are not contents of consciousness, they are effectively absent as influences, whether present or absent as facts.

The contents of consciousness involved may be experienced material, mental or even intuitive objects. That is, they may be concrete environmental or physiological factors or conditions, or phenomenal contents of mind (memories, imaginations, verbal thoughts, emotions, whatever), or again acts or attitudes within the agent himself. The operative contents of consciousness may also include abstractions from any such experiences (that is, concepts, inferences, any intellectual considerations). The degree of consciousness involved may be intense ('conscious'), peripheral ('subconscious') or virtually nil ('unconscious'); this may or not affect the degree of influence.

But in any case, the medium of consciousness is essential to characterization of something as an influence. If something has an effect on an agent's actions independent of consciousness, i.e. (as we say) 'objectively', we may speak of ordinary conditioning, but not of influence. Thus, for instance, a person's natural constitution (such as brain makeup or bodily structure, in comparison to other individuals of the same species or to other species) certainly affect his actions, but not in the way of influence. These may well yet be influences – if their apprehension plays a role in his actions. For example, if a man seeing his poor physical appearance in a mirror is discouraged from pursuing a woman – his ugliness ceases to be a mere condition and becomes an influence (on his own volition[1]).

Influences are not sufficient conditions for will, but are 'efficient' in the sense that without them or others like them the willed act would be improbable, though still possible somehow. Positive influences make things more readily accessible (facilitate); negative influences make things more difficult (hinder). It depends which way one is headed.

A simple way to represent these tendencies is to visualize someone moving an object up or down a hill: the hillside (or the force of gravity) is analogous to a positive influence on a person moving the object down, but analogous to a negative influence on a person moving it up. The degree of influence may be illustrated by the inclination of the hillside. If it is steep, influence is great, pro or con. If it is not steep, the influence is small, pro or con. If the inclination is strong in a favorable direction (downhill), little effort is needed to achieve the desired end; but if it is unfavorably strong (uphill), much effort is required. If the inclination is not strong, comparatively more effort will be needed for positive goals (down) and comparatively less effort for negative ones (up) – comparatively to a stronger inclination, that is.

For this reason, we often speak of people's proclivities or inclinations. The term inclination carries a useful image, suggesting a landscape with valleys or canals symbolizing the easy (more inertial) paths, and hills or other obstacles as requiring special (more volitional) effort to go over or overcome. We can imagine a marble (one's will) traveling over such variable landscape, subject to alternative developments and the conditions of transition at different times from one to the other. The landscape idea allows us to view effort not merely in terms of

[1] Of course, regarding the woman's volition, it may be influenced by the man's appearance in her sight, whether such appearance is a mere condition or an influence relative to his volition.

modifying the paths of a marble (going with little effort on the easy courses, or with more effort on the harder ones), but also more radically in terms of remodeling the landscape itself[2].

To influence the course of events is to make them *tend* to go a certain way rather than any other. To clarify this, we might refer to effort, since effort is diminished or increased according as it goes with or against tendencies. But we should not confuse a heuristic formula with a description or an explanation. Our impression is that influences stimulate or stagnate our responses, i.e. increase or decrease our will. This aspect of influence can perhaps best be expressed with reference to the ***likelihood*** of a certain response.

It seems that the *more* effort an act of will requires, the *less* likely is the agent to provide it; the *less* effort it requires, the *more* likely will he do so. The agent is naturally lazy or economical: if things are made easy for him, he will probably go for it; if difficult, probably not. This is said 'all things considered', i.e. taking into account all the influences involved, and not just focusing on some and ignoring others. It does not exclude that the agent may indeed invest more effort, and overcome some great resistance, especially if motivated accordingly by some other influence (for instance, a moral principle or a vain self-image).

A tendency may be viewed as a 'force', which goes in the same direction as the 'force' of one's will, reducing the amount of effort needed and increasing the likelihood of such will, or in the opposite direction, making more effort necessary and the will less likely. The advantage of this concept of 'force' is to provide a common measure between tendencies and will, although they are very different in nature, making a calculus (additions and subtractions) possible.

Note that here, when we speak of probabilities (more or less likelihood), we mean something radically different from the statistics intended in causation, in that it does *not* signify that, under certain unknown or unspecified conditions, the likelihood becomes a necessity. We here just report that that the greater the effort required the less likely it is to be provided; and the less effort required, the more likely provided. That effort and likelihood are thus inversely proportional may be viewed as a sort of *principle of inertia* observed in the spiritual realm. But such analogy is not meant to imply inevitable behavior patterns.

As we have pointed out, the assumption of freedom of the will is that irrespective of all influences, where volition occurs it is nevertheless 'freewill'[3]. Perhaps an inner sense of freedom is involved, which allows us to think that, even if we have always behaved in a certain way in certain circumstances, we are still free to behave otherwise in similar circumstances. Nevertheless, we are inwardly aware that had the influential circumstance been different, we might well have behaved differently. In other words, the influential factor played a role in our decision, though not a determining one.

A person is said to have a (relatively) 'strong will', if over time his conduct is less readily influenced – especially by other people's wills, but also more broadly by any circumstances. A person with 'weak will' is often (comparatively) driven or thwarted in his will, i.e. his effort is rarely equal to his intentions. Note that these two concepts are relative: they may compare different periods in the life of the same person, as well as the behavior patterns of different people.

The influence of something on one's will is essentially subjective, since it depends on a cognitive act. Nevertheless, the influence as such is objective enough, in the sense that its increase or decrease of the effort requirement for a given volition in given circumstances may be considered as a 'natural law'.

One's cognitive assessment of a situation may be true or false, objectively justifiable or unjustifiable; the influence of something 'perceived', or assumed to be a fact, does not depend on its being a fact in fact. It suffices that one *believe* something to be a fact, or to be likely enough, for it to have considerable influence. Whether such belief is based on experience, reason, emotion, wisdom, intelligence, stupidity, faith, guesswork, confusion or self-delusion is irrelevant, so long as it is operative.

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[2] For example, in a physiological context, we might refer to the general health and tonus of one's body as the underlying landscape. Every action occurring within a favorable bodily context is easier, so in the long run it is best to keep fit without having to predict what one will eventually undertake. Similarly, with regard to the mind and soul.

[3] Influence may therefore be likened to natural spontaneity in that its results are only probabilistic, never determining. See chapter 1.3.

It follows that a molehill may seem like a mountain, and vice versa. Thus, one man may be brought to a standstill by the prospect of resistances that were in fact minimal, while another may heroically overcome enormous odds because the challenge seemed puny to him. Neurotic doubts may ignore all evidence, and artificially inhibit volition, bringing on defeat. Shining faith may ignore all rational objections, and fire volition to triumph.

It should be made clear that influences on our actions are rarely singular and simple. Just as a mass of ordinary conditions underlie them, so influences are multiple and complicated.

To give an example: suppose I lift a heavy load. The lifting is objectively difficult because of the great weight of the load and the inadequacy of my muscles, or the wetness of my hands, or my having insufficiently eaten lately, or my feeling drowsy. But there are also mental factors, like my self-confidence, or my fear of dropping the load and making a noise, or my being in a hurry, which affect things more subtly and obliquely, in the way of influence. My considering myself strong encourages me, my fear of falling upsets my concentration, my feeling rushed spurs me. All these factors play a role in shaping my physical movements.

At any given moment, with regard to any pending act of will, there may be a multitude of influences. We may view them collectively as making one resultant influence. But it is more accurate to view them severally and analytically. Some point in one direction, others in the opposite direction; the resultant is the net influence, which may be positive, negative or balanced. Moreover, while volition is still undecided, there may be a range of options; each of these has its own resultant influences, so that the options may be ranked, ordered according to the degree and polarity of influence concerning them.

Furthermore, influences should not be considered as isolated forces, because they often mutually affect each other in some way. Causal chains and structures may interrelate them. This may mean ‘mutual reinforcement’, such that one gives rise to or increases another, and then the latter generating some more of the former, till both reach a certain stable level. Or it may mean ‘mutual counteraction’, such that one decreases or eliminates another or vice versa.

Thus, a detailed calculus of influences is theoretically possible, and needed to fully clarify each situation of will. In practice, such calculations are very tentative and approximate, since we do not have sure and precise data. We should also note the difference between identifying and estimating influences before the fact, i.e. as an aid to choice and decision, and doing so after the fact, i.e. as an aid to judgment about a completed volition. In the latter case, we are taking stock, to reward or punish ourselves by rating, or to learn lessons for the future.

2. Processes of influence

Natural objects or events influence an agent when appearing before him, as objects of consciousness (through his perceptual faculties, outer or inner, or, more broadly, through his conceptual faculties). Such cognitions may generate emotions, imaginations and deliberations in him, as well as consequent actions: these all involve or are influenced acts of will. Emotion involves evaluation, an act of will; imagination is largely willed projection of mental images; deliberation is thought, also largely willed; and of course, action means will.

Also, subjects normally influence other subjects via such natural objects or events. Thus, for instance, a woman may attract a man by walking or dancing in front of him (light), by speaking or singing (sound), by her odors or perfume (smell), by physical contact (touch), by her cooking (taste), or more abstractly by her beliefs and values made evident through the preceding sense data. These external items may generate emotions, imaginations and deliberations in the man, which eventually influence him into appropriate action.

Various subdivisions of influence need to be considered. One may be influenced by *information*, which may be perceptual givens or conceptual insights, whether in the material world or in the mental matrix, arising naturally or through research or by the suggestion of other people (through oral, written or visual means). The information need not be true; it suffices that it is believed. Our individual beliefs evidently influence our individual actions; moreover, our belief systems give rise to behavior patterns[4].

[4] One might add that, conversely, our behavior patterns sometimes affect our belief systems.

One may also or alternately be influenced by *emotions*: felt in the body or in the head, concretely or abstractly. Emotions, of course, often arise in the face of information (be it true or false). Though information may influence via emotions, it may also influence without intervening emotions. Some emotions are apparently 'spontaneous', arising without clear relation to any new information; we experience an emotional charge in us, but cannot offhand interpret its origin. This is quite normal; but if it happens too often without rational explanation, it may become a source of anxiety and pathology.

> Some people believe, rightly or wrongly, in the possibility of direct 'spiritual' influence. In this view, one may transmit ideas to another by mysterious pathways, or even will one's will on another's will. In such cases, if influence need not happen through natural objects or events (i.e. mainly via matter), are the mechanics of influence more complicated than normally conceived? In the case of telepathy, this possibility changes nothing essentially; the label 'influence' remains accurate[5]. In the case of takeover of will or domination, we may simply refer to an effective annulment of the power of will of one subject by another: such overpowering is not 'influence' in a strict sense, but more precisely a far-reaching volition[6], effectively a 'conditioning'.

As earlier stated, information may influence actions in a roundabout way, as well as directly. The following is a more detailed analysis of such oblique influence in the case of emotions, for instance (similar analysis is possible for all information).

We can, by the way, distinguish three types of 'emotions' – visceral 'feelings' in the body, some of which are products of physical sensation (e.g. a pleasure during massage or a pain upon burning) and some of which seem of psychosomatic origin (e.g. a person wakes up in the morning with a cloud of anxiety in the stomach area or bubbles of joy in the upper chest[7] or throat), and purely mental emotions whose phenomenal qualities are very subtle if at all discernable.

It should be stressed that an emotion may be present and felt – but *unadmitted*. In such case, it is said to be 'subconsciously' cognized, because one is aware of it with a low or minimal degree of consciousness. This is in contrast to 'conscious' emotion, which is more explicitly recognized, which means that *one identifies with it* to some extent, at least enough to consider and deal with it. We may also distinguish between awareness *of* an emotion, and awareness *that it is* emotion; the latter classifies the former, implying an additional cognitive act.

When an emotion occurs, our usual response is to try to explain it, so as to (a) quash it, or at least diminish it, if it is negative, or (b) continue it, if not intensify it, if it is positive. We naturally prefer the positive to the negative (unless we are masochistic, but then the desired positive emotion is further down the line, more tortuous), and cling to what we desire and escape from our objects of aversion.

This response of 'trying to explain', is a search for the cause(s) of the emotion or for its exact meaning (besides its being pleasant or unpleasant) – and the important thing to understand is that the interpretations we (or others) suggest are merely hypotheses, which may be right or wrong. In fact, they are very often mere conjectures, i.e. probably wrong, in that the more complex particular emotions usually have multiple causes, and it is hard to establish which of these are the dominant ones even when we manage to list them all.[8]

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[5] If telepathy exists, it would mean that the thoughts of one person could receive information originating in the thoughts of another. The latter might be an already influential person (a guru, a parent, a teacher, a lover, a friend), but possibly even an unknown person. This could occur in waking hours, or equally well in the course of dreams. It is difficult to account for all dreams with reference only to subconscious volition of scenarios, coupled with 'spontaneous' eruptions of content from the brain. Dreams occasionally contain totally unexpected scenes, seeming beyond one's usual creative abilities and too complex for chance. Is the explanation for them perhaps that they occurred by intermingling of two or more minds? Do all minds meet in some 'collective unconscious', maybe?

[6] A sort of telekinesis of among spiritual entities. This would be another hard to prove thesis of 'parapsychology'.

[7] I suppose that until modern times people believed the seat of the soul to be in the heart due to the experience of certain feelings in that region.

[8] Whether emotions are necessarily 'intentional', i.e. aim in the direction of some object, is an issue. I think some do and some do not. The latter may just be bodily or mental phenomena without significance. In that case, no interpretation will be found for them. Another question we might then ask is whether all emotions are perceived at some level or they can exist without being ever felt. Again, I suspect the latter may be true.

Thus, emotions influence actions in two ways: simple/direct or complex/roundabout. First, the emotion itself may affect conduct, by easing or obstructing certain actions (e.g. a light-hearted child skips around; whereas a person with a headache avoids movement). Second, the emotion supplies the data around which we construct hypotheses about its causes, and these explanations in turn affect our actions (e.g. thinking I feel good or bad because someone said something to me, I pursue or avoid that person).

Psychologists study *specific* influences, which group together various combinations of the above-mentioned genera of influences. For example, the various categories of influence on one's life might be listed, including one's parents and other family members, one's school teachers, other friends and acquaintances, certain books read (novels, religious documents, histories, philosophies, scientific treatises), the other media (movies, TV and radio programs, etc.), and so forth. Then for each category, the nature of the influence would be ascertained – e.g. *what* did one's father or mother influence? Perhaps one's moral inclinations, one's manners, one's choice of spouse, or one's political beliefs. And *how* did such transmission occur? Perhaps by example, by preaching, or through some shared experience. A nexus of information and emotions is involved.

3. Instincts in relation to freewill

With regard to the statement made that all volition is freewill, we have to answer a question concerning *instincts*, i.e. seemingly inherited (or at least individually innate) environmental information and behavioral responses that are not mere reflexes. How are certain surprising observed behaviors to be explained? How come all members of a species behave in the same way in the same circumstances? Can some cognitive data be genetically stored and passed on? Can some volitions be controlled by genetic factors?

For a start, we should avoid confusion between intentional acts and acts with certain incidental consequences. In both cases, there is will, indeed free will – but the former are consciously aimed at some goal, whereas the latter *only seem* to have a certain direction to an ex post facto observer. The *intention* of instinctive acts is obscure, vague and internal; it is not to be confused with the biological *utility* of such acts identified by scientists. The instinctive act responds to an inner urge, in a way that calms or gains relief from that urge. The soul's consciousness is focused on that urge, and the will's aim is to answer that pressing demand anyway it can (whether the 'how' is immediately evident, or has to be discovered or learned). The soul is not told 'why' it has to do it, i.e. need not know what the life-sustaining value of its instinctive response might be. The *urge* to so act, on the other hand, may well be viewed as 'programmed' by nature (i.e. a product of evolutionary selection).

Consider for example a baby sucking at its mother's bosom. The action as a set of mouth muscle movements is one we would consider volitional, yet we would not seriously suggest he has consciously directed his muscles for feeding purposes. The baby's volition is surely influenced by hunger and perhaps by the smell of its mother's milk. In such cognitive context, there may be a number of reactions the baby's volition may choose from, including sucking, crying, waving arms, say. In this sense, the baby *has choice*. But it just so happens that sucking movements are the primary choice, the most likely choice, i.e. *the easiest* option in the range of available options. Thus, the event involved is equivalent to trial and error learning, except that *the first choice volition is influenced to take* is the 'right' one. The other options are therefore not tried.[9]

Thus, 'instinct' is a legitimate and definable concept: it may be fully assimilated to our concept of influence. The volition involved in instinctive acts is not exempt from freedom and responsibility. We can therefore side with the proposition that genes do not transmit foreknowledge of the environment or complex living skills. Technically,

[9] Similarly for animals. For instance, in the case of a baby turtle rushing to the sea before predators get it, after its egg hatches on the seashore. How did the poor beast know the danger and where and how to escape it? I have not studied the matter; but may suggest possibilities. It may well be born with a nervous urge to run immediately, a sort of angst it gains relief from by running; the issue is then what makes it run in the specific direction of the sea? Perhaps the smell of the sea, the breeze, the light or the temperature influence it. In any case, we need not assume some mysterious source of innate knowledge on its part. It suffices to say that the influences, whatever they be, are such as to favor that behavior rather than other possible alternatives.

the influence of instinct functions exactly like any other influential item. ***Simply, an instinct is an innate influence, which may or may not be partly affected by environmental circumstances or their cognition; and this influence happens to be the most powerful of other innate or acquired influences.***

Influences are not all equal: this is true in all contexts, as we have seen, and not just with reference to instinct. Influences are of varying effect on volition; some influences are strong, some are weak; they may be ranked. Influences are all operative simultaneously on the soul about to will; but the soul is most likely to will in the easiest direction, i.e. the one in favor of which the influence is strongest, loudest, most manifest. That this direction is consistently taken by a baby or a lower animal does not imply that other options are in fact absent; they are indeed present as potentials in the background of the volition, only being less influential they are less likely to be felt or acted upon.

For a more mature or more spiritually developed soul, the easiest option is not always the one taken; the soul has discovered its own volitional power, and can therefore choose less obvious directions. Note that even an animal may swerve (or be influenced to swerve) from its instinctive path; for example, a dog trainer can get a dog to resist its hunting instinct and obey the injunction to walk on when it comes across some prey.

In formal terms, we may refer to a disjunctive proposition, where "P or Q or R…" are the alternatives open to volition in given circumstances and influences. However, P may be more likely than Q, and Q more likely than R, etc. In such case, the agent will 'instinctively' opt for P, the most obvious and influential choice, although he may eventually discover his capacity to opt for Q or even R, notwithstanding their being less manifest and influential.[10]

4. Liberation from unwanted influences

When we meditate on our internal workings, we can easily see the force of inertia existing in us. It is very evident that though we may to some extent have freewill, it is not always and everywhere immediately operative. Thoughts, imaginings, memories, emotions, faces, musical tunes, words – may go on and on for hours, without our being able to stop them or channel them for more than a few seconds, if that. It may however be possible to control such dull mental activity in the long run, thanks to disciplined spiritual exercises like meditation. Thus, freewill seems to exist, not in all things 'at will', but often only by 'working on oneself' over time, i.e. going through a time-consuming process.

This is how the yearning for inner *liberation* may first arise. Once we have witnessed our own incapacity to concentrate our will over a period of time, we are appalled and become anxious to remedy this weakness of the will. Some philosophers think the solution to be asceticism, considering that most of the force that drags us down into such endless chatter of the mind is the body's innate desire for food and drink, physical comfort, sex, and so forth. Others argue that more pondered methods must be used to overcome mental scattering and sluggishness.

Many people are not even at the level where they are concerned with the ongoing obsession and anarchy inside their minds, but are rather frightened by some of their compulsive external behavior patterns, such as anti-social anger and violence, or self-destructive and socially dangerous lust, for examples. Such actions may be viewed in religious terms as sins, and fought by prayer and other pious deeds; or they may be confronted in a more secular perspective. But what concerns us here is their relationship to freedom of the will.

Every punctual or sustained attempt to gain ascendancy over such subtle or coarse tendencies is an expression and affirmation of freewill. Self-mastery is possible, if we do not 'identify with' the influences on our will, i.e. if we do not say or think of them 'this is me' or 'this is part of me'.

But in addition to the influences already within us, in the way of thoughts and feelings, we may need to look further out and consider the way nature and other people condition and influence our mental and physical actions. I will have different life-support issues to face if I live in a hot country or in a cold country. If someone imprisons me, or creates a totalitarian society around me, it affects the things I need to think about and what I may do or not do. The contents of my thoughts are affected by my environment.

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[10] Note that I use a similar schema of ordered disjuncts in my work *Future Logic*, with regard to 'factorial induction' (see part VI).

Anything that affects our subjective world, or objectively broadens or narrows the choices open to us in our life, anything to be taken into consideration in the exercise of volition, is an influence. If it is considered good, if facilitates our pursuits; if bad, it makes things more difficult for us. We logically prefer the former, and so far as possible oppose the latter.
Volition is capable of being influenced, but is also capable of overcoming influences or diminishing their impact. This is made possible through a policy of awareness, or mindfulness – 'working on oneself'.

5. Propositions about the future

Volition is expressed through propositions of the form "A wills W", which may be called 'volitional propositions'. Although the simple present tense is needed to discuss volition as it occurs (whether in categorical or conditional propositions), mostly we use such form in the past or future tenses. Usually, except for introspective reports, we only know after the fact that "A wills W" was true: i.e. such a proposition is derived from the past form "**A willed W**". The future form "**A will will W**"[11] has always been of especial interest to logicians and philosophers, because it seems to claim as a fact something that depends on free will and therefore cannot strictly be predicted with absolute certainty.
Many propositions less explicitly involve prediction of free will, yet depend for their truth on the will of someone or those of many people. For example: "the sea battle will take place tomorrow". It should be noted that *such propositions about future will(s) are not only about volition, but also about the amount of influence on volition*. In our example (it is actually Aristotle's), the likelihood that the prediction come true is very high (though not absolute), because all the people involved are so entangled in their war that it would be very difficult (though not inconceivable) for them to make peace overnight. Thus, propositions about influences involved are tacitly implied.
All forms concerning the relation of influence may be called 'influential propositions'. This includes positive forms, like "X influences A to will W", and their negations, like "X does not influence A to will W". Also, as we have seen, the extreme terms may be replaced by their negations – X by notX and W by notW. As for the middle term, A, there is no point considering its replacement by its negation, notA, since that would not refer to an agent; we can only substitute another agent, say B or C. A subspecies of influential forms are the forms of incitement, such as "X incites A to will W" and its derivatives.
One common form relating to both volition and influences thereon is "**When/if X occurs, then A will do W**" - where (i) X is any influential event, i.e. a natural (deterministic or otherwise) occurrence and/or a volition by self and/or other(s), which agent A is aware of or falsely believes to be true prior to acting, and (ii) agent A is any person or group of persons or other volitional entity or entities, and (iii) W refers to some act(s) of will by agent A (individually, in parallel or collectively), which act(s) of will may simply be a decision taken but not yet carried out, or a partly sustained process, or a process sustained to its conclusion, successfully or not.
Such forms may be referred to as 'personal conditionals' in that they resemble logical, natural and other types of conditional propositions. However, they are different in important respects. The antecedent here is an event that has not only to occur but be perceived to do so, or alternatively it may even just be wrongly thought to occur - by the agent(s) concerned. The consequent is connected to the antecedent not through some logical or natural necessity, but through the personal *resolve* of the agent(s) concerned, which may be of varying strength - which means that though the consequent uses the copula "will do" it is at best probable but never certain that the agent(s) will bring it about. The proposition as a whole can of course nevertheless be declared true or false, according as all its intended conditions are fulfilled or not.
Note that the proposition "When/if X occurs, then A will do W" does not strictly tell us what A will do when or if X does not occur; we should perhaps rather state more clearly "Only if X occurs, A will do W" to distinguish this from "Whether X occurs or not, A will do W". We may classify personal conditionals as a category of de re

[11] It is no accident that the same word "will" is used both for volition and for the future tense. It has the same etymology in either sense [O.E. *willa*].

propositions, different from natural, temporal and extensional conditionals; they are not, however, to be confused with logical conditionals, and in particular not with material implication (which is a subcategory of de dicta proposition, and not at all de re as its name might lead one to suppose).
Detailed formal study of these and other such forms is beyond the scope of this book, but the job needs eventually to be done by someone.[12]

[12] But see **Appendix 1** for some additional comments on this topic.

7. The Workings of Volition

1. Cultural context and epistemological considerations

My purpose here is to propose a theory of volition; or more precisely, a theory of the locations and sequences of its operation, because at this stage a formal definition of volition as a causal relation is still not ripe. It is always useful to at least broadly conceive a scenario, even if some crucial details may be missing. It need not even be immediately sufficiently clear to be decisively tested.

My approach in this research ought to be clarified. The issue of volition is an ages-old philosophical problem. It is so, not through the invention of philosophers, but because philosophers understood the need to reconcile two givens: one being the inner certainty most people have that they possess some powers of choice and responsibility for their actions, and the other given being the extreme difficulty in putting this concept of will into words and justifying it somehow. Furthermore, the issue of volition is not idly speculative, but has enormous practical consequences – psychological, moral, spiritual, social, legal and political ones – for every human being.

Over time, many solutions to the problem have been proposed, ranging from outright denial of volition (mechanism, behaviorism), through very pessimistic and very optimistic lyrical appraisals of human potential which made various claims without addressing the formal issues, to metaphysical and mystical beliefs that could perhaps be accused of overkill.

My own approach to philosophical problems has always been to try my best to justify ordinary beliefs, but in a critical manner, without naivety. As a product of the 20th Century, I am inclined to pay due respect to science and avoid metaphysical flights of fancy. Nevertheless, I am far from being a pure materialist, and keep an open mind with regard to mystical traditions. My philosophical policy is to try to include rather than exclude, to find the common ground of opposite doctrines so far as possible, to remain moderate and down to earth.

To ensure a mature and sane approach, we must first and always be attentive to methodological issues: *never to claim an item of knowledge without at the same time considering how such claim itself is to be justified*. I favor a phenomenological approach, which is at all times aware of the amount and nature of experiential content in any conceptual construct. This must be backed up by repeated logical review, based on inductive as well as deductive principles, including the said reflexive self-revaluation.

Thus, with regard to the problem of volition, we must first try and formulate a minimalist thesis, as close as possible to the belief system of ordinary people and to the materialistic science culture of the day, before opting for more far-fetched theoretical constructs. It is a principle of adduction that the simple is always preferable to the complex. The primary issue in volition is just *to conceive* some coherent, plausible theory. Just to imagine some scenario, pictorially and in words, is hard enough. Secondly, of course, such conceivable thesis must be empirically tested so as to gradually reduce its speculative status.

With regard to methodological standards, it should first be pointed out that all concepts, however speculative, are based on some experience. Without some sort of experience, however subtle and frail, no conception or conceptualization is at all possible. Under the heading of ‘experience’, we must however include not only physical experiences (sensory data of any sort), but any phenomenological content – including mental projections (images, sounds, memories, imaginations, anticipations) and last but not least intuitive introspections (personal cognitions, valuations, volitions, intentions, meanings). To limit admitted evidence to physical sensations, arbitrarily omitting all introspective data, is misleading.

Secondly, it is important to realize that every theory, however confirmed in experience, is still to some extent speculative. Those who claim that only their extreme materialism is scientifically acceptable, and who accuse all mental or spiritual doctrines of being mere speculation, are just pretentious. What gives a theory ‘scientific status’ (in the large, correct sense) is its adherence to all known and cogent rules of inductive and deductive logic. What makes a theory preferred at any time is not its materialistic content, but its being the most consistent and

confirmed available hypothesis. Science is not a prejudice, or the reserve of some modern equivalent of an established priestly caste. It is open, flexible and democratic, in the power of those most experiential and logical in their approach to knowledge at a given time.

As we shall see, a common error in aetiology today is to confuse the concept of *natural* causation with the narrower concept of *physical* causation. Logical analysis of the concept of causation makes it a purely formal issue of presences and absences of possible things in conjunction and separation. Thus, the paradigm of natural causation, its strongest determination, is definable as "if X, then Y; and if notX, then notY" (or "X and notY is impossible; and notX and Y is impossible") – where X, Y, notX and notY are each potential things[1]. The "things" involved need not specifically be concrete physical objects, but may be abstracts from such, or again mental phenomena and their abstracts, or even things intuited within oneself. *This form has no intrinsic limitation to physical terms*, note well. So, there is no logical basis for the insistence by some that natural causation is exclusive to physical events, and refers to a physical law.

All the defensive remarks above are addressed preemptively to certain categories of philosophers. As we proceed with our theory of volition, the reader will see that our approach is balanced and fair. We will try to satisfy all legitimate concerns of the modern mind, while however allowing whatever concepts are necessary (mind, soul) to avoid throwing the baby (volition) out with the bathwater (metaphysics). We will try to be transparent, and evaluate the justification of any idea presented, but keep in mind that in some cases a scenario has to be laid out before its validity can be discussed.

2. Theoretical context

I must, to start with, remind the reader of certain aspects of my world-view and terminology, developed in previous works[2].

I acknowledge three domains of existence, called the physical (or material), the mental (or imaginary) and the spiritual domain (or soul sphere). These correspond to three categories of experience, namely sensory perceptions (through 'bodily' sense organs, including visceral emotions), corresponding mental projections (images and sounds perceived 'in one's mind', including memories, dreams and daytime fancies, and anticipations), and intuitions of self (inner knowledge of events without phenomenal attributes, such as one's cognitions, valuations, volitions). Conception refers to abstraction from such data, involving comparisons of measurement. And conceptualization, proposition, inference, thought are further derivatives of all the preceding.

All these items of experience and conceptual knowledge are to be regarded phenomenologically to start with. That is, they need merely be taken as neutral appearances, leaving aside definite judgment as to their reality or illusion till a thorough process of logical evaluation has been carried out. More precisely, appearances are to be considered real, until and unless reason is found to consider them illusory; for the concepts of reality and illusion have no meaning other than with reference to appearance.

Colloquial use of the term "mind", note, would include within it both the individual soul and mental content, because most people have not made a clear distinction between inner perceptions and intuitions. I prefer using the term "psyche" to refer to this soul-mind complex. Also note, to most people the term "spiritual" connotes disembodied ghosts, or mystical out-of-this-world chimeras. But in my writing these terms are more limited: when I use the term "spiritual", I just mean "pertaining to the soul" and when I use the term "mind" I usually mean "the sum total of mental phenomena". "Subjective" is another term I usually use very specifically, to mean "in or of the subject", i.e. with reference to the soul. Note this well to avoid confusion.

My understanding of the "soul" is that it corresponds to the self, the entity apparently at the center of all cognitions (soul as subject) and volitions (soul as agent), as well as valuations (which involve both cognitions and

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[1] Thusly, in the natural mode of causation. But we may also count as "natural" in a larger sense similar relations with extensional modality, although the latter are in some respects also akin to logical causation. See my *Future Logic* and *The Logic of Causation* for full presentation of these concepts. I shall keep things simple here.

[2] Notably, my *Phenomenology*.

volitions, and also mediate between them). Its substance seems distinct from that of material and mental phenomena, so it is distinctively labeled as spiritual. This appellation, spirit, also serves to stress the experiential difference of soul and its said functions, namely that it has per se no phenomenal qualities (color, brightness, shape, sounds, etc.), so that it cannot be perceived but only intuited. All phenomenal qualities seemingly in it are to be distinguished as projections in the mental domain, note. Even so, the soul cannot logically be a mere abstraction from physical and/or mental events perceived, because that would not explain how individual events within it are known (i.e. what I am now experiencing, believing, preferring, doing, etc.).

> We may ask the question: Do consciousness and will exist? The answer to that is: *Both consciousness and will are self-evident in the question being asked and understood.* Without them, there would be no research and no meaning to its results.
>
> Granting they exist, the next question concerning them would be: What are they? *Since we cannot perceive them, either in matter or in mind, they have no phenomenal qualities; they must therefore either be intuited or conceived, or both.* They are certainly conceivable: we may logically construct hypotheses as to what they might be, and see how such theories work out in the long run in the light of all experience. The theory that seems inductively most fitting is that they might be events or *relations, between subject and object, agent and act.*
>
> The role of subject/agent is not to be filled by matter/body or by mental-stuff/mind, because the latter are too varied and changing. A postulate of soul, as an entity of some third substance called spirit, allied with mind and body, is therefore put forward, instead, to fill that role. However, conception is not enough, because it only yields general abstractions, and cannot explain our common daily experience of *particular* events of consciousness and will. The latter can only be explained by supposing non-perceptual experiences, i.e. intuitions.

From one's own soul (the center of cognition and volition), and its apparent interrelations with one's own body (the closest segment of matter), and the existence of other similar, bodies with comparable behavior, one may infer the existence of other souls by analogy. The simplest theory of soul is that it is an "epiphenomenon" of matter – i.e. when matter comes together in certain specific combinations (organic molecules, living cells, animal organisms of some complexity) a soul is generated over and above such matter; the justification of this theory being that such soul needs be assumed to explain certain observations. This is the interpretation of soul most acceptable to modern predispositions, the closest to materialism, and we may here accept it as a working hypothesis.

There are other theories of soul worth mentioning. The religions of Judaism, Christianity and Islam, considerably influenced by Neoplatonism, seem to favor an idea of soul as an individual entity temporarily residing in, or associated with, a material body and its mental prolongations, but potentially surviving physical death and capable of disembodied existence for spans of time. Religions originating in India wax more mystical, and conceive of a universal soul of which all particular souls are fractions (*atman*, in Hinduism), or at least of a universal ground of being or mind from which individuated selves crystallize by a trick of illusion (*anatman*, in Buddhism). But in fact, the present analysis of volition does not require us to opt for any particular doctrine of soul.

> With regard to the identification of the self with an illusion of consciousness, which is found in some Buddhist texts and becoming more popular in the West today, it seems to me that a misuse of the term 'consciousness' is involved. Consciousness is not, as they seem to suggest, a sort of stuff, which can become 'delusive'. The substance of 'mind' (in a large sense, i.e. all of the psyche) is two-fold, in my view, comprising the stuff of soul (spirit) and that of mental projections (memories, imaginations, and the like – the 'mind' in a more restricted sense). As for consciousness, it is *a relation*, between two terms, one called the subject (any soul) and the other called the object (be it spirit, mind or matter).
>
> Consciousness has no consciousness of its own. The relation it constitutes is unequal, involving at one end something cognized and at the other end something cognizing. The former exists at least as appearance; the latter 'apprehends' or 'comprehends' this appearance as an 'experience' or an 'abstraction from experience'. Consciousness is never the subject of the relation of consciousness; it is

usually the relation, and occasionally (in the case 'self-consciousness', which is a misnomer[3]) additionally the object. Consciousness or awareness is a function of the soul (subject), and not identical with it. Consciousness may have as its object contents of mind, but that does not make the two the same.

Buddhist philosophers and their modern imitators tend to blur the distinction between the three terms: soul, consciousness and mind. This tacit equation or ambiguity serves to give certain of their pronouncements a semblance of psychological and philosophical depth and consistency. For it allows us to assume one meaning or the other as convenient to the context, without having to systematically harmonize the different meanings[4]. Such a 'fuzzy logic' approach is lazy (if not dishonest), and in the long run obstructs knowledge development in this field. We must admit that three terms are used because we are dealing with three distinct objects. It is not arbitrary hair-splitting, but objective precision.

Although I tend to draw it as a circle in explanatory diagrams (as in the figure further on), the soul should not be confused with such material or mental images standing in for it. It is important to remain aware that since the soul is intuited and not perceived, it has no concrete phenomenal qualities – and therefore *no shape, no size, no extension, no location* in material or mental space. If our body and mind seem to be the habitat of our soul (and we have the impression that our soul is centered behind our eyes though coterminous with all our body), it is due to the fact that our experiences *of body and mind* are the most proximate in our perspective, and not due to our soul being experienced in a place. The soul may however have time limitations, since these are not phenomenal per se. Once we grasp that the soul is without phenomenal boundaries, the various views about it mentioned above seem more easily reconciled.

Another preliminary clarification worth making concerns the relation of souls, mind and matter. It is conceivable that mental projections occur directly from soul, but I tend to assume – so as to remain as materialist-friendly as possible – the minimalist thesis that mental projections always occur via matter. That is to say, the soul signals to its underlying brain what it wants it to mentally project, and the brain cells more or less obediently do the job of projection, after which the soul "sees (or hears)" with its "mind's eye (or ear)" the projection. The advantage of this assumption is that we can explain why mental projections are not always quite voluntary or exactly as we wanted them. The brain seemingly can and often does make mental projections of its own.

Nevertheless, we can remain in principle open to the idea of *telepathy*. Without wishing to definitely advocate it, I must at least consider its conceivability, since I sometimes seem to experience it. We could minimally claim that telepathy occurs through some yet undiscovered material medium, perhaps electromagnetic waves; and thus that telepathy operates through the nervous system like any other object of sensation. Or we could more radically suppose that souls can project images into each other's mental domains; this would imply that mental domains stretch across or transcend space. Or we could more radically still opt for a spiritual explanation, adhering to the metaphysics that all souls are ultimately one. This is said in passing, to be exhaustive, without intending to definitely affirm any doctrine.

I tend to anyway think that mental phenomena are a peculiar product of, if not kind of, matter, since the phenomenal qualities composing both are the same (or at least all those of the mental domain are to be found in the material domain, though it may be that some in the material domain are absent in the mental domain). What seems evident is that the sights and sounds we mentally project are recombinations of sights and sounds earlier absorbed through our physical senses.

Furthermore, the mental and material domains seem to share space (unlike soul) as well as time. Mental projections are usually thought of as occurring in an inner space; but if we consider hallucination (e.g. seeing your glasses on your nose after you have taken them off), it is clear that they can seemingly extend into the outer space that matter inhabits. Indeed, this power of apparent outward projection of mental images is a fundamental cognitive tool, making it possible for us to "mentally" dissect and bound phenomena for the purpose of selecting discrete percepts from which concepts are constructed.

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[3] Because it is the soul that is conscious of its consciousness; i.e. one instance of consciousness by the soul turned on another instance of consciousness by the soul.

[4] From a formal logic point of view, this is a common expedient to conceal *a breach of syllogistic rules* – in particular the 'fallacy of four terms'. Thanks to an ambiguity, predicates applicable to one subject are illicitly passed over to another.

Considering all this, it is often more appropriate to treat mind as matter, in an enlarged sense of the latter term. Certainly, the "laws of thought" (identity, non-contradiction, and exclusion of the middle) apply in the mental domain as in all others. We may well imagine both "a thing" and "its contradictory" coexisting in the same field, but in truth the two items mentally co-existing are distinct images or verbal symbols intended to refer to the former. As regards the latter phenomena as such, each of them is indeed *present and not absent* in a certain time and place, in perfect accord with the said laws.

But even so, we should note that mental phenomena do not seem to interact among themselves as material ones do. It does not seem like mental phenomena directly produce other mental phenomena. Rather, if two or more mental phenomena display constancies of conjunction or separation, we tend to regard the superficial causation as more deeply due to the soul's repeated choices, or to physical laws operating in the brain making it project such regularity. We do not consider mental projections as having the necessary continuous existence, much as we would not consider the light and sound events in a movie as really having any causative relation to each other.

The explanation of the peculiarity of the mental domain should not however be viewed as due to a flaw in our formal definition of causation, as in the preceding suggestion that regularities may be "only superficial". There are two reasons we believe that causative relations may be discounted in the domain of imagination even when temporary and local regularities appear. One reason is our lifetime experience of the great variety of imagination: *anything can be imagined in combination with anything else* (e.g. a 'giraffe' shape may have the shape of 'wings' added to its back and be blue all over); this does not offend the laws of thought, as already explained. The other reason is our personal intuition that we have some degree of control over mental phenomena*: in this domain, if we will some image, it appears; and if we will its absence, it disappears*.

Because mental phenomena are not as heavily "substantial" as material ones, we tend to associate them more with the soul. Such association is reinforced due to mental projections seeming directly accessible to perception by the soul, and seeming for the most part under the soul's power to manipulate. Furthermore, at least thus far in human history, mental phenomena are a private spectacle to a given soul, not something publicly accessible. In those respects, mind is regarded as an aspect, or at least a property, of soul. To conclude, it is very doubtful that the mental domain can exist apart from soul and body.

It is worth focusing for a moment on the *utility* of the mental domain. The soul (the subject of cognition and agent of volition) and the brain (the presumed physical apparatus underlying thought and action) both use the mind or mental 'matrix', let us call it, as a screen on which to project visual and auditory images (and possibly 'images' in the other phenomenal modalities: smell, taste, touch, emotions).

People use their mind as a *medium of communication* with themselves, first and foremost; more broadly, with other people or animals, alive or dead, and even with God (the latter practices, when they go beyond mere rehearsal of future material dialogue, imply a belief in telepathy of sorts, i.e. in the ability to send thoughts across space and time). Monologue is thus dialogue, and dialogue is often monologue. The mind serves as a sort of versatile, erasable drawing and sounding board, facilitating speculation, imagination of alternatives, and so forth.

The mind is also used as a medium of 'communication' between soul and brain. When the soul, via the brain, projects images, the brain incidentally records (in machine language, as it were) what has been projected. I see no reason to locate memory storage anywhere but in the brain; memories are not kept in the soul or mind. Moreover, the brain provides information for cognition by the soul through the mental matrix. This may be mere recall (memory of past sensations, emotions, imaginations, verbal thoughts), or it may be reshuffled memory that signals present sensations or emotions by associations and symbols.

That is to say, what appears in the mental matrix is not necessarily voluntarily produced by the soul, but may come in part or in whole from the body via the brain. And in the latter case, the brain does not simply bring up relevant or irrelevant data from its memory stores as is; it often 'manipulates' this data, supposedly as a way of informing the soul. Dreams are often so understood; but the same applies to daytime fantasies. In meditation, one sees how much of such involuntary chatter and fictional image projection is going on, of which we are ordinarily barely aware but which has considerable influence on us.

3. Stages in the process of volition

Our present proposal is ***to locate the act of volition proper entirely within the soul performing such act***. The reader is now referred to Figure 1, below, which is a schematic presentation or map of the process of volition.

a. It is proposed, then, that the soul spontaneously generates within itself some modification labeled W. The primary event W does not spontaneously arise in the sense of a chance natural event – it is 'produced by' and the 'responsibility of' the soul concerned (i.e. the agent), these terms being here understood intuitively and with reference to our various clarifications of volition thus far and further on. The event W is thus, note well, a purely spiritual event (the term spiritual being intended to mean 'pertaining to the soul', conceived as having a distinctive substance labeled 'spiritual'). Note that the event W may be supposed transient – it need not permanently mark the soul.

Once it has so emerged from the act of volition proper, ***the spiritual event***, W, ***in turn causatively gives rise to some first physical event***, E1, ***which may in turn causatively give rise to other physical or mental events***, E2, E3, E4, etc.

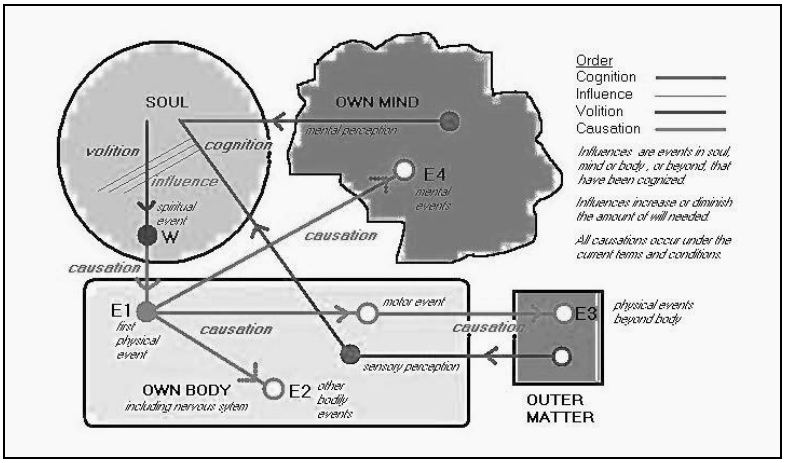

Figure 1. Mapping the process of volition

Note well that, strictly speaking, in this theory, the first physical event is not a product of volition *but of causation*. It is nevertheless an exceptional causative transaction, in that it has a spiritual event as cause and a physical event as effect. Still, as we have earlier explained, the causative relation as we have formally defined it (as conjunction or separation of certain presences or absences) does not specify *what 'substance'* the terms related may have. Nothing a priori excludes the spiritual, mental and physical domains from interacting causatively every which way. For example, as we shall suggest further on, a physical event may cause a mental one.

The position that will as such occurs entirely within the soul is here taken in an attempt to mitigate the concept of volition in the eyes of materialist critics, by relegating the issues involved to a distinct domain, that of the spirit. Such isolation allows physicists to continue going about their business, formulating principles concerning natural causations and natural spontaneities, without having to reflect on the problem of volition.

However, note that we could equally well consider that the first act of volition has the first physical event (E1) as its *direct* result. The advantage of this position would be to eliminate the spiritual event (W), which could be construed as contradicting the essential *unity of the soul*, which seems necessary to personalize it (the soul). However, such a doctrine of extreme uniformity or homogeneity of the soul is (in my opinion) impracticable, because we have to suppose that all sorts of complicated events do happen within the soul, in cognition, valuation and volition.

It suffices, I think, to consider the soul as not permanently marked by its will or other episodes (influences or conditions); it remains essentially itself come what may, it retains its original purity and identity. I tend to visualize spiritual events (like W) as creases or more dynamically as undulations in the soul – i.e. I take the term

'*stirring*' we often use in volitional contexts literally. Spiritual events are particular, temporary stirrings in or of the soul.

But anyway, it could be argued that the said alternative position, placing the first effect of volition outside the soul, would not greatly affect our view of nature. For we must admit that the first physical event, whether it in fact arises from volition indirectly or directly, will appear to an observer of the material domain alone as a causeless event – i.e. as naturally spontaneous – since such observer would be unable to discern any *physical causative* for the event. Our theory here is, however, that such first physical events, if we could pinpoint just where to look for them, are not truly causeless, but caused either directly or indirectly by volition. Thus, the theoretical issue as to how soon the first physical event arises can be left open.

With regard to *the location of the first physical event* after volition, we can safely predict that it occurs in *specialized* neural cells or combinations of cells[5], most probably in the brain (though perhaps sometimes in the rest of nervous system). For we may readily assume that *telekinesis*, the volition of physical events at a distance, is impossible. Most people (myself included) make no claim to telekinesis and have no incontrovertible vicarious experience of it. Some parapsychologists do claim evidence for it, but their experiments so far are (to my knowledge) regarded as technically flawed by the majority of scientists[6]. Thus, it seems likely that volition cannot act on the world beyond our own body except causatively through that body; and even within our own body, volition cannot act directly on all organs, but only on some, after which causation takes over.

Concerning *mental* phenomena, it is suggested in our above diagram that they emerge from physical ones, whether the latter had their source in volition or emerged entirely from physical causatives. While it is not unthinkable that soul can will mental events directly, without passing through physical events, I tend to favor the more materialist position on the basis of arguments already put forward.

Thus, the phenomenal aspects of thought (which involves imagination of visual and auditory phenomena, including inner words) and speech (producing outer words – gestures, sounds or writings, symbolizing meanings), as well as perceptible action (other physical products, which may impact on nature or on other souls, or even reflexively on one's own soul), are all products of will external to the soul, occurring via physical events (in the central and peripheral nervous system, including the motor system). But the intentions of thoughts, speeches and actions lie in the soul, influencing the latter to will them into being.

In the light of the present presentation of volitional processes, we could distinguish four levels of volition, involving a progressively diminishing personal control of events. The deepest level is volition within the soul: that is pure volition, which is free. The second level is volition of the 'first physical event': this already involves causation, if only in that the terms and conditions must be right for such event (e.g. a functioning brain). The third level is volition of further mental and bodily events: here, the admixture of causation is much larger (as more and more terms and conditions have to be appropriate). The fourth level is volition of external physical events and social events that ensue: here the measure of personal control of events is least.

b. Let us now consider ***the issue of influence***, with reference to our earlier definition of this causal relation. The *area of operation of influence*, i.e. where influences influence, the place in the volitional process where influence is operative, is between the source of the volitional act within the soul (agent) and the primary result of the volitional act (event W, in our scenario). Within this 'space' in the soul, influence either makes it possible for the agent's will to succeed with relatively less effort (positive influence) or increases the internal resistance his willpower must overcome by increased effort (negative influence). We can picture this space of influence as analogous to a field of force.

But this area of operation of influence is only the last stage in the process of influence. As we have seen, the things that are influential may be internal to the soul (spiritual events, such as prior attitudes) or external to it,

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[5] Such cells might be referred to as physical 'receptors' of volition. They have to form part of a living organism, needless to say.

[6] If such assumption against telekinesis turns out to be empirically wrong, we can readily adapt our theory of volition accordingly. It is not a central issue in the present discussion. I make a reasonable assumption, based on my knowledge context. My method is to stick close to generally accepted fact, and not engage in speculations that might seem like flights of fancy.

being mental events (such as memories or imaginations) or bodily events (such as sensations or visceral emotions) or events occurring beyond the body's boundaries (be they natural or artificial). Whatever their nature, these things must be *cognized* to be influential – whether such cognition be perceptual (of mental or material phenomena) intuitive (subjective) or conceptual (abstract).

Thus, to trace the whole process of influence, we must consider the cognition that gave rise to the internal forces aiding or opposing volition, and prior to that the objects of that cognition. It is important to emphasize that the power of influence depends on *belief* only. It does not matter whether a volition is based on true knowledge or false opinion; it suffices that we believe what we have cognized is real enough. Superstitions may be as influential as scientific facts; indeed more so, since the former unlike the latter will not be readily abandoned if experientially or logically refuted.

Thus, the cognition involved may be realistic or illusory, logical or irrational, correct or incorrect, knowledge or opinion, certain or unsure – its epistemological status is irrelevant to its force of influence, so long as it is believed in. But additionally, the *degree* of belief obviously plays a role (e.g. if I am unsure about the efficacy of a certain course of action, my will is likely to wobble). Inversely, objects that are not cognized cannot be counted as influences.

Influences, then, subjectively produce a sort of field of force in the soul, emanating from the place of their cognition into the space where volition erupts, facilitating or hindering the latter's aimed at result.

With regard to *effort*, certain clarifications are worth making, here. The emotion of effort, perceived during physical or intellectual work, should not be confused with the more abstract concept of 'effort' we have introduced in relation to our analysis of volition and influence. The latter is only called effort by analogy[7], referring more precisely to degree or intensity of will applied in the presence of positive or negative influences. Emotions of effort are concrete phenomena, felt in the body or inside the head. Being perceived, they may and do *influence* volition; but they are not the same as the subsequent 'effort' in will. The latter is non-phenomenal, known intuitively by the self, and occurring within the soul; it is an aspect of a spiritual event, viz. willing.

c. Closer inspection reveals that there are often ***preliminaries to volition***, in the way of subjective self-positioning. Volition might be supposed to sometimes occur without particular motive or intention, as pure whim; but even then, the agent may not be totally blind to context, and aim his whim in a particular direction, leaving it indefinite only in some respects. In any case, normally some preparation is involved before launching one's principal act of will. This may be quick and easy or require much time and effort. Furthermore, an act of volition may be temporarily interrupted while some unanticipated side issues are resolved.

There is a prior activity of *reconnaissance*, researching and gathering data of potential relevance to action. This newly-cognized or recalled data (be it practical or theoretical) will of course influence the direction and intensity of volition. But the way it does so is not so direct: an *evaluation* is needed first. The latter is itself no simple act, but involves *conceiving alternative scenarios*, which implies mental projection. Once the possible or anticipated courses of events have been visualized, and comparatively evaluated, a *choice* is made as to which one of them will be pursued.

Moreover, having clarified the *purposes or goals* of one's action, one will *investigate and deliberate on the means* to achieve them. This stage is itself complex and gradual, as more information may need to be sought and experiments may need to be made, with tentative steps and repeated adjustments all along. Finally, a *decision* is made, and *effort* begins to be applied in the direction intended. As such effort encounters the help or obstruction of influences, it is reduced or intensified. Unless a new decision intervenes, the will is repeatedly reaffirmed and reoriented, until the intended result is achieved.

Preparation and execution of volition may be *variously efficient*. One may be reluctant or lazy to act, or eager and energetic. One may be always alert and proactive, or forget some things and fail to anticipate others. One may take the unexpected in stride, or allow oneself to be perturbed by every little obstacle. One may be quick to adapt to changing conditions, or negligent in taking appropriate action. All these betray one's attitudes – whether one is in earnest or half-hearted about one's will – and they of course affect one's performance.

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[7] In the same way, Isaac Newton developed the mechanics concepts of force and work by analogy to the emotion of effort attending pushing and pulling, lifting and lowering, and environmental changes they cause.

Each stage in a volitional process may involve *subsidiary acts of will*. Will is often 'empirical', a trial and error process, since we are neither omniscient nor omnipotent. Attempts are made, which may fail. With perseverance, other attempts replace them, which may succeed. The way is never absolutely certain, except in very limited segments of will. The (direct or indirect) volition of an external (physical or mental) event is usually the end-result of a great many *subjective* acts of volition, of which we are conscious to varying degrees. But moreover, a given externally oriented volition may have to be preceded by numerous *other external* volitions.

The concept of influence is designed to account for *the residues in consciousness* of all such prior inner and outer volitions, in a given volition. That is, the field of influence as it were stores the significant history of the volitional process, comprising all that has cumulatively informed the agent into certain directions of will necessitating certain donations of effort.

d. Concerning the role of ***emotion*** in volition, it should not be overestimated. Within the soul itself, there is a basic function called valuation. This is an inner expression of self, necessary for an entity with freewill, which must choose between alternative potential courses of action. Valuation is thus a primary inner act of volition. Emotion, on the other hand, usually (except when it is confused with valuation) refers to something passive, occurring in the physical and/or mental domains. Valuation is a spiritual (i.e. in the soul) event known by intuition, self-knowledge; whereas emotion is a concrete physical and/or mental phenomenon, known by sensory or 'mind's eye' perception. Included under this heading are not just pleasure and pain, but the full range of possible nuances in feeling.

Emotions have various degrees of effect on volition, but in fact can never determine it. Being essentially 'external objects' relative to the soul, they cannot condition it, except in the way of influences. That is, emotions are perceived and such perception in turn makes volition easier or harder for the soul. Emotions, of course, are often consequences of volitional acts; not directly, but through causation by the 'first physical event' emerging from volition. For this reason, our emotions are often eventual outcomes of our valuations; and this is why we equate them. But such equation is not always justified, for a given emotion is not inevitably and invariably indicative of a certain valuation, since physical intermediaries must be taken into account.

It follows that people who generally identify themselves with their emotions are wrong to do so; their judgment is often distorted. This applies to *feelings* of desire, aversion, love, hatred, hope, fear, certainty, doubt, it is beautiful, it is ugly, etc., as distinct from the *valuations* with the same names. That may sound like a rather cold doctrine to some people, but it seems consistent with all our observations and theorizing in the present work. Its intent is not to dehumanize, but to strengthen people. It is the feelings that are 'objective' (i.e. objects outside the soul) and the valuations that are 'subjective' (i.e. acts of the soul), rather than the other way around as people believe!

In practice, of course, people have so much going on inside them, in the way of both inputs and outputs, that it is no wonder the fine distinctions we have drawn here, such as that between soul and phenomenal personality, and in particular between valuation and emotion, are remote and laughable to them. They are too busy, too weighed down. It is only through meditation, when one steps back and lets things calm down considerably, that one can begin to sort things out and observe their order.

4. The scope of freewill

Concerning *freedom of the will*, our pictorial representation provides some further clarifications. But let me first stress that when looking at the diagram above, the reader should not take it too literally. The soul is not extended, with cognition and volition happening in different places, and influence as something in between, that volition flows through, ending in an event. All these things happen together, in the same spot and simultaneously. They have been separated schematically, for purposes of analysis; but they are in fact *all one* event. It is one and the same self that cognizes, is influenced by cognition, and wills something, all together, in one and the same movement.

It is obvious that even the first physical event emerging from volition is *subject to natural terms and conditions*. We have suggested specialized organs in the nervous system are probably necessary for such events[8]; and such organs would naturally depend on neurological, biological, chemical and physical laws[9]. If such organs are absent or damaged, or when inappropriate conditions prevail in them, they are inoperative. *The soul is not free to will whatever it wants wherever it wants to into its physical environment*, but only certain possibilities 'allowed' by natural law. This *principle of due process* is the philosophical assumption of most people, except perhaps lunatics [10]

On the other hand, the soul has considerable freedom of will *within itself*. It can manifestly (as introspection and internal experiment shows) do a lot 'at will' there, though much of what we call 'will' is not immediate will but a cumulative result of smaller immediate wills that *adapt to changing conditions* (adaptation implying consciousness, note). Thus, volition is not unaffected, but influenced by cognized external as well as internal events. This influence (which is finally something internal) *can never generate or block will*, but only accelerate or decelerate a particular direction of will, because will (the inner movement of soul) is a function of the agent only. Cognitions cannot in themselves move soul or stop it from moving.

All the more so, *external conditions* be they mental or physical, be they natural or artificial products of the will of some other soul(s), which might be construed to impinge upon the agent directly (i.e. not as influences, via his cognition of them), are apparently incapable of doing so. We may at least postulate such incapacity, as a further principle of freewill. This position is quite conceivable, if we express it as an *independence of the spiritual domain from the mental and physical domains*. It is conceivable that whereas the physical and mental domains can be modified, directly or indirectly, *within specific terms and conditions*, by the spiritual domain (in our context, through certain acts of volition by souls), the reverse is not possible. It is not inconceivable that Nature includes this limitation, this one-way street between its domains.[11]

It is worth noting that causal pathways between the mental domain and the spiritual and physical ones seem to have precise directions. According to our theory here, the soul projects mental phenomena only indirectly via its volition of physical events in the nervous system (so that memory in the brain of a mental projection *precedes* the actual appearance to the soul of the imaginations projected by it). Also, whereas the physical domain can after volition, or even without prior volition, affect the mental domain, the reverse is not true. The mental domain does not seem to directly affect the physical domain, but does so only through its cognition by the soul, which thereafter affects the physical domain under influence of such cognition.

To repeat our freewill thesis: the physical and mental domains condition the spiritual domain through consciousness of their contents (this is influence); but they do not condition it directly, without consciousness (in the way of ordinary conditioning). This concerns the internal workings of soul, implying one aspect of freedom of the will.

On the other hand, soul has the privilege of being able to make changes in the physical or mental domains. However, this capacity is *not infinite, but subject to natural law*. This restriction is especially evident in the physical domain, which sets finite terms and conditions to the volitions of the soul on it. Thus, volition may not operate just anywhere in it, but only in circumscribed locations (such as special living cells, probably). Subsequent limitations may occur in the body (e.g. a man's muscles may be too weak for some job); or further out, beyond the body (e.g. he may be imprisoned by impassable walls).

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[8] This concerns humans and animals. With regard to the will of God, we would have to suppose such a restriction to be inapplicable. Obviously, the Creator of matter must have a will independent of matter. It follows that His providential acts in the ongoing life of the universe do not require special material receptors.

[9] Signals within the nervous system are electrical and chemical.

[10] Even believers in shamanism and magical powers allow for 'due process'. Only, the processes they regard as possible seem obscure or ineffective to the rest of us.

[11] It does not follow that the spiritual cannot control the spiritual. Thus, we may assume that God can dominate the human or animal soul anytime He chooses to. This would be a theological limitation to our freewill. It is a privilege however that God mostly chooses not to exercise, since it is His will that humans and to a lesser extent animals have freewill. He gracefully relinquishes some of his power, *de facto* though not *de jure*, so that we may exist "in His image and after His likeness" (to quote *Genesis* 1:26).

Once a volitional act has inscribed its 'first physical event', material nature takes its course. Some physical reactions may follow inevitably, some conditionally, and some may be impossible come what may. Reactions may occur in the body (e.g. a man's arm and hand move), or onward outside it (e.g. he may break down a wall). In these senses only, i.e. with reference to all *physical limitations and reactions* to volition, volition may be said to be liable to ordinary conditioning. But all that occurs outside the soul, note well, and so does not essentially qualify its freedom of volition as such[12].

Cognition, volition and valuation are not only distinctive functions of soul; they are presumably its only ways to function. The soul's cognition is not to be confused with the computer-style operations of the nervous system serving as its accessory. The soul's volition is not to be confused with physical or mental preliminaries or consequences. The soul's mode of operation is volition, i.e. freewill; that is presumably its *only* modus operandi: it is not subject to any causation from nature (the physical and mental domains), though it may be affected by nature through cognition. But of course, its freewill is operative only during the soul's existence; for the soul may be generated or destroyed by natural causatives (birth or death of a body)[13].

[12] If we are precise in our thinking about volition, we can avoid doctrines that put freedom in doubt. Thus, for example, if a boxer gets knocked-out, his soul's freedom of will is not affected, but the temporary blockage of his sensory and motor faculties make the assertion of his will in his body impossible, as well as deprive him of information needed to usefully direct such will, for a while.

[13] Believers in God would of course add that it is He who controls birth and death.

8. Volition and the Special Sciences

1. Volition and the laws of physics

As already stated, the agent in volition is distinctively *a static cause of change*. Any eventual full definition of volition is sure to include this fact among others, as a striking differentia compared to causation and natural spontaneity. In causation, change can only be caused by previous change; and in mechanical spontaneity, change is uncaused.

It might be supposed that causation of movement by something at rest is formally conceivable, with reference to propositions like the following: "if X is Y, then it does Z; and if X is not Y, then it does not do Z", where the antecedents are static predications whereas one of the consequents (viz. X doing Z) involves motion. But this would be a wrong reading of the causation eventually involved; if causation there indeed be, the if–then propositions would implicitly intend that *change* from X being Y to not being Y brings about *change* from X doing Z to not doing Z, or vice versa.

Anyway, the if–then propositions used here, granting X to be a volitional agent and that 'does' here means 'wills', are not intended to refer to causation, but to influence: X does or does not do Z, not because it is forced to by virtue of being Y or not being Y, but by way of freewill. This is a weaker form of consequence, due to the causality known as influence.[1]

Though we do say of machines that they 'do' things, we do not consider that they ever produce change from rest. Only the volitional agent can rightly be supposed to do that[2]. He is an 'unmoved mover', though he may be influenced by static and dynamic factors. But (except eventually for God) that does not imply the agent to have infinite powers, or to be a creator who produces matter *ex nihilo*. Nevertheless, he is evidently able to affect the world around him, by diverting Nature from the inertial course she seemingly would have taken without him.

Since volition involves an agent (a soul), usually a purpose (mentally projected), and sometimes a physical receptor (such as our brain), it implies a spirit-mind-matter interface. This remains a phenomenologically justified proposition, whether we regard the spirit-mind-matter distinction as real (as in Western common-sense philosophy) or as illusory (as in certain Oriental philosophies). Some consider only matter to exist (e.g. behaviorists), some only mind (e.g. Berkeley); I think spirit (soul), mind (the stuff of ideas) and matter all exist in some way[3].

As we have seen, volition may be conceived as a spiritual event that may have physical consequences under specific conditions. It was suggested that the bridge between the spiritual and physical domains in such cases could be construed as causative. This would mean that some event W in the soul arising out of volition has a causative relation to some physical event E1 in a specialized organ of the nervous system. That is, under certain conditions or invariably, "if W, then E1, and if not W, then not E1" is true.

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[1] Note that logicians have yet to work out the logic of such milder if–then propositions in detail. It is an important and urgent task for us to take up.

[2] I do not mean to exclude offhand the remote possibility that we might one day produce 'machines' of such complexity (effectively, artificial organisms) that they have souls, consciousness and freewill. To me, these are natural, biological characteristics; the soul being an epiphenomenon of complex matter with powers of cognition and volition. But the fact is, machines as we now understand the term do not have these characteristics, although many people (computer programmers, for instance) speak of them as if they do.

[3] I leave open the question as to whether one of these substances is dominant (i.e. the ultimate constituent of the others). My own conviction is that they are all three modifications of one common substratum: different sorts of vibrations (perhaps different dimensional manifestations) of the common stuff we may call "existence".

This is formally quite conceivable, as already argued, because nothing in the relation of causation as normally formally defined specifies that antecedent and consequent must have the same 'substance'. From a purely formal point of view, the proposition that causation by a spiritual event of a physical event is impossible would have to be specifically justified, as a special exception. It is an additional proposition, not an implied one.

The justification is readily put forward by exclusive materialists: such intervention in physical processes by a non-physical cause would contravene a basic law of physics, namely the law of conservation of energy. For it is argued, every physical change (motion, chemical change, whatever) requires energy input, and such energy cannot come from outside the closed system constituted by matter.

Before we debate this objection, let us consider how volition might physically intervene.

Let us imagine that the act of volition simply causes a sudden *release of physical energy* in some one direction, presumably within the brain. We do not say that the energy was created ex nihilo by the soul, or that it emerged from a metamorphosis of spirit into matter, because that would raise difficulties with regard to the law of conservation of energy. We suppose instead that the energy was stored within the brain in some form, and merely released by the volition[4]. The volition just 'opened the vane'; it triggered the mechanism allowing the energy to be transferred, generating certain physical processes.

Our thesis is then less radical than at first appears. It does not frontally assault the law to the extent of claiming the energy comes from the volition or its agent. It more modestly claims that the *triggering* of energy release itself require *no energy* input to occur. All the energy involved is already present, trapped; it is merely let go in some direction. Since causation as such is not about energy transfers, it is conceivable that under very specific terms and conditions such an event (pulling the trigger, as it were) would cost nothing energetically.

I am here obviously inspired by the image of 'Maxwell's Demon'. In this thought-experiment devised by James Clerk Maxwell, an agent stands at the trapdoor between two boxes, containing particles of matter in motion. The agent opens and closes the trapdoor at will, letting the particles gradually pass in a desired direction, so that they end up all in the same box, or with the hotter ones in one box and the colder ones in the other. Thus, the entropy (disorder) in this imaginary natural system is decreased, contrary the second law of thermodynamics.

Physicists point out that this fantasy does not presage an exception to that law, because it does not take into account the entropy increase in the functioning of the 'demon', his observation of the particles and his opening and closing of the trapdoor, not to mention energy expenditures.

But we might reply that such argument is *circular*, i.e. it assumes in advance, without actual experiment or calculations, that the 'demon' would be subject to these physical laws and thus predicts entropy would be increased and energy expended. In my view, we do not have to be bound by these laws in the present context for several reasons.

Firstly, because in the last analysis the physical principles we circumvent are, or are derived from, generalizations from experience. As such, it is ultimately logically permissible to particularize them, if the need arise. It is true that the laws in question are fundamental hypotheses of physical science; they have proven extremely durable in the face of all physical experience and for that reason support the whole edifice of our physics theorizing. But just as physics has come to admit the possibility of natural spontaneity in the field of quantum mechanics and with reference to the Big Bang, so *it may be that in certain very complex biological-neurological systems certain laws find exception*. That is, whereas matter in simpler systems follows established physical laws, when it comes together in certain especially complex systems it may not. Since these laws have to date *not* been tested in these complex systems, we may well consider such possibility.

Secondly, knowledge is not built by rigid adherence to some pre-ordained non-logical principles; it adapts creatively to the information and issues at hand. We *must* make some sort of allowance for volition in our world-view. It is not an arbitrary posture: we have too much in the way of inner experience to explain by that means; we cannot just ignore our inner life. Thus, while *a particular* proposal of how volition might function (such as ours here) is always open to eventual criticism, the fact that *some* proposal is necessary is not really debatable. To ignore something is not to explain it; to explain it away is not to explain it, either. We should not yield to the

[4] I gather that the minimum possible is a quantum of energy, nothing less being detectable or thinkable under quantum mechanics theory. I gather also that this could suffice to produce larger phenomena, by a sort of avalanche effect.

extreme materialist dogma without overwhelming *ad hoc* evidence and argument. The onus is on the proponents of that dogma to justify their case in the specific situation at hand, giving a credible detailed account of why they think what seems like will is not so.

Thus, our present argumentum is twofold. We propose, firstly, an ontological concept, that *the whole may be more than sum of the parts*. We claim that when inorganic matter coagulates into organic molecules, then living cells, and the latter in turn coagulate into plant and animal organisms, new *collective* phenomena arise for such composites – namely life, consciousness and volition – which are radically different and unpredictable from the phenomena applicable to the components severally. Such 'collectivism' is admittedly contrary to modern 'reductionism', according to which the behavior of composite bodies is ultimately to be explained by the laws applicable to their components.

Secondly, we propose an epistemological objection, namely that such reductionism is the issue at hand and cannot be used as an argument without circularity. The physical laws in question are hypotheses supported by adduction; these are admittedly credible, but they have been tested only in the field of inorganic matter. Their extrapolation into the field of living matter, and in particular of animal and human life, is a mere act of faith on the part of materialists. So long as they have not come forth with *precise experiments and mathematical formulas* that specifically predict and explain the phenomena we call life, cognition and volition, they may not lay claim to a more 'scientific' status. Such status is not attached to particular doctrines or dogmas, but to any effort of cognition that seems the most open and fair-minded, and rigorous in its methodology.

Returning to our scenario: following Maxwell's schema, we can imagine the soul (agent), by his volition, flicking a sort of weightless switch to release energy. Presumably, he knows instinctively just how to do that. This movement of will costs him nothing in terms of physical energy. It is primarily a spiritual event, but it induces (by causation) a change on the physical level, the release of stored physical energy. Such energy release may be punctual or sustained. It is neither the end result of a physical process nor spontaneous in the mechanical sense. It may be attributed to no one but the agent, whatever the surrounding influences. The direction of energy release, rather than any other potential directions, is the manifestation of the agent's 'intention' in willing. Observed after the fact, it reveals the intention. Volition is not a chance, mindless event – it involves consciousness.

Thus, we here claim exception to certain physical laws within the *very circumscribed* regions where the spiritual, mental and material domains intersect. The domain of volition as such is not material (and thus subject to physical laws), but mental (i.e. in the mental stuff of memories and imaginations, at least with regard to projected goals) and spiritual (i.e. in the soul of the agent). On a physical level, physical events caused by volition appear as spontaneous, because their cause is in a non-physical domain. *It is not inconceivable that experimental detection of such events might one day be devised.*

It is important for this purpose to distinguish between the *first* physical movement caused by the spiritual will, and all *subsequent* physical events. The first movement occurs somewhere in the nervous system (the brain, and maybe the spine or nerves). This may start a chain of events, culminating in a visible (or otherwise experienced) physical event (e.g. the movement of a hand or the throwing of a stone). The chain reaction is not necessarily inevitable, given the initial volition. It depends on physiological and environmental factors (e.g. the health of one's body, the availability of a stone to throw). The latter domains are where the laws of physics and biology operate normally. Only the initial physical movement caused by will is exceptional.

2. Volition and biology

It is interesting to note, to start with, that biology textbooks may refer to voluntary and involuntary processes without ever admitting volition or asking questions about it. Yet (I would say), volition is central to many issues in biology.

a. We have here suggested that *consciousness and volition occur in tandem*. On an abstract level, the following propositions concerning them seem reasonable. Consciousness is, of course, the prior of the two, and conceivable without volition (since we are sometimes aware of things without reacting to them). But all volition requires some consciousness, and cannot occur without it. This is even true of whim, and all the more of volition with a purpose. Volition is distinguishable from a spontaneous mechanical event by the involvement in it of

consciousness. Volition is free will; there is no such thing as non-free volition. Nevertheless, the degree and range of freewill may vary enormously. The power of will is proportional to the power of consciousness.

Consciousness would be without practical utility to an organism if not complemented by volition. By informing volition, cognition becomes meaningful as a tool of survival. Furthermore, most of our cognitive processes depend on acts of volition. At the sensory level, for instance, opening or focusing our eyes is volition. At the mental level, recalling a memory or imagining is often volitional. In thought, volition is needed to direct our attention hither and thither and to intensify it as appropriate. *Our consciousness, not being infinite, would not get us very far without volition.* The conjunction of volition and consciousness in organisms is thus no accident of nature, but necessary.

These propositions are based on observation of living beings, but also may serve as postulates for biology. *Consciousness and volition are found wherever nervous systems are found.* In humans and higher animals, the latter include a central nervous system (brain and spinal cord), and a peripheral one, with sensory and motor capabilities. In lower animals, such as insects or worms, the physiological apparatus for consciousness and volition is much less elaborate, but identifiable nonetheless. In plant life, and (I presume offhand) in single cell animal life, no organs for consciousness and volition have been identified.

Movement following sensation does not necessarily indicate volitional reaction; response to stimuli may be reflex. All the same, at least for higher forms of animal life, volition to some extent comparable to ours may be assumed, in view of their observable *behavior*. Such assumption seems further justified by the major *morphological* and *genetic* similarities between them and us, suggesting our evolution from common life forms. It remains true that human cognitive and volitional capabilities, including speech and reasoning[5], are significantly superior, suggesting a quantum leap in evolution. But we can point to notable differences in brain structure and size to explain this; it does not ignore or contradict any law of biology.

Also noteworthy are the observable facts of social interaction among animals and/or humans, and in particular the emergence of culture in human groups. These are indicative of consciousness and volition. They make possible the transmission, between contemporaries and from generation to generation, of living skills (e.g. hunting techniques) and, in the case of human culture, historical and abstract knowledge, as well as possessions and technology.

In sum, the distinction between 'lower' and 'higher' animals might be made by saying that the former are more sensory and reflexive, responding immediately to present stimuli in standardized ways, while the latter increasingly function through the medium of *a mind*, i.e. with reference to memory (storing and recalling past sensations), imagination (reshuffling memories, dreaming) and anticipation (considering alternatives, making choices), which makes possible their powers of cognition, volition and valuation stretched over time. Among the latter, humans apparently excel, probably mainly due to their development of language, in thought and speech (probably concurrently).

Biologists today are content to *describe* rather than explain physical processes in living organisms, using apparently neutral terms like "doing" or "organization", which avoid mention of volition or even consciousness, let alone soul. But to sidestep certain issues is not to resolve them. However, it is up to biologists to find some credible bridge between the philosophy of soul and their material concerns and findings. There is no hurry, and no justification for offhand rejection. If philosophers are right in postulating soul, biologists will eventually come around, and no doubt then greatly enrich the concept.

b. As we have argued, consciousness and volition imply a soul, serving respectively as subject and agent in them. Soul is logically needed to explain both them and our knowledge of them. Soul of course implies belief in

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[5] But there is no doubt that at least the higher animals 'speak' through facial and bodily expressions, as well as uttered sounds; and we can observe them 'reasoning' to some extent, judging situations and selecting responses to them. The differences are differences of degree rather than essence. Also, we should not forget that certain species close to human have existed and are now extinct.

some sort of '***vitalism***' (here understood as the belief that animal organisms, including humans, have a 'soul')[6], as against '***mechanism***' (the belief that beasts at least, if not also humans, are merely very complex machines). However, vitalism need not be understood simplistically, as the traditional assumption of a 'ghost in the machine' of human and animal organisms. For, as we have explained, *soul has no phenomenal qualities, not even spatial extension or position*. Thus, any imagination of the soul as a transparent cloud animating the body is misconstrued, and any attack on the soul that assumes such a symbol literally is an unfair criticism.

The vitalist-mechanist dispute is of course far from academic, but scientifically, ethically and politically extremely charged. It is paradoxical that the mechanistic doctrine, which is touted as empirical and positivistic, emerged as a pillar of modern thought some 400 years ago, thanks to René Descartes. For all his intelligence in many other respects, he was nevertheless very much an 'ivory tower' philosopher, and his assumption that unlike humans, (the other) animals have no soul was based on no observation or scientific process. Yet, as often in the history of philosophy, his prestige sufficed to give respectability, credence and momentum to the idea.

The horrendous practical consequences of mechanism are today increasingly evident all around us. Many people do not look upon animals (other than their pets, perhaps) as living beings who can suffer, but as 'things' that utter cries and make faces because they are so programmed to do by 'nature'. Therefore, industrial agriculture subjects animals to brutal living and dying conditions, and daily sacrifices millions of them, under the pretense that the masses can only be fed that way. Animals are cruelly tortured daily in laboratories, under the pretext that the needs of 'life science' justify such 'experiments'. And now, we witness the coming of genetic engineering, the ultimate in disregard for the difference between living organisms and inanimate matter, driven by the utmost greed, endangering major species[7]. Altogether, it is an orgy of unconsciousness and moral ignorance.

> The Nazis used similar degradation to justify and make possible the Holocaust of Jews in 1933-45. As Paul Johnson writes: "Rather as the medieval anti-Semite saw the Jew as non-human, a devil or a sort of animal (hence the *Judensau*), the Nazi extremist absorbed Hitler's sub-scientific phraseology and came to regard Jews as bacilli or a particularly dangerous kind of vermin"[8]. Mechanism degrades animals to the level of mere objects; racial and similar hatreds degrade humans to the level of animals, and therefore (by way of a syllogism) of 'things'.

Mechanism is not innocuous; it promotes such heartless mentality. One may well consider it as a dogma *designed* to conveniently rationalize inhumane treatment, against beasts and eventually humans. Surely, its advocates, and their practicing disciples, should be in prison, or at the very least in lunatic asylums, considering the harm they have done, are doing and are about to do on this planet; instead of which, our society honors them and enriches them.

The success of physics does not justify mechanism in biology. Mechanism cannot in reason claim the benefit of the doubt normally accorded to an untested scientific hypothesis, in view of its deadly practical consequences. As already stated, until its proponents actually come forward with mathematical formulas that *exactly predict* all the actions of animals, or even humans, they cannot pretend to defend scientific truth.

c. With regard to the theory of ***evolution***, to which I subscribe, the following can simply be said. We can conceive that when inorganic matter (itself star dust, the end result of a long history of astronomical events) coalesced in certain sufficiently complex structures, it became living matter (single cells). These structures evolved into still more complex structures, viz. plants and lower animals; then the latter further evolved into higher animals, including humans. In this latest stage, at least, nature has allowed for living organisms with souls

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[6] Though strictly the term vitalism is also applied to vegetables as well as animals. A more appropriate term would be spiritualism (compare to materialism and mentalism), though this is generally associated with mystical *séances* aimed at communicating with the spirits of the dead (also called 'spiritism').

[7] For instance, in the case of genetically modified fish, the engineered specimens are bigger and more sexually active than their wild relatives. As the former inevitably escape into the natural environment, they are so bound to gradually genetically displace the latter. But being, very probably, physiologically weaker organisms, the GMO are themselves non-viable in nature in the long run.

[8] *Op. cit.* p. 473. Similar arguments are often used as pretexts for individual or mass murders.

to appear, having considerable special powers of cognition, volition and valuation. There is nothing inconceivable in that from the point of view of evolutionary theory.
These special characteristics appeared in nature, and have so far been more or less compatible with the environment. They have seemed, at first, like particularly good adaptations. They could well, however, over a longer term prove incompatible. Indeed, it seems more and more likely, in view of mankind's current propensity to destroy other species and the biosphere itself. Our own demise is perhaps even, for all we know, already now inevitable within the next few decades. So, if only on planet Earth, these special characteristics, in the degree found in the human species at least, may well turn out to have been self-destructive – an unsuccessful, overambitious experiment of nature. But for now, they are here.
More will be said on biological issues in a later chapter.

3. Therapeutic psychology

The special sciences aimed at the study of human (and more broadly animal) behavior, notably psychology and sociology, are of course, implicitly if not explicitly, closely tied up with the concept of volition and its allies. All too often, students of behavior ignore or conceal this basic truth, and develop their analyses without explicit reference to it, thinking by such omission to appear more 'scientific'. They appeal to chemicals and statistics, without formally analyzing what logically underlies their discourse. This is foolish, if not dishonest. My hope is that the present work will help to overcome such distortion.
A few comments are worth making here regarding mental disease and its cure, without claiming any clinical knowledge. The concept of mental disease is presumably derived by analogy from that of bodily disease. We refer by it to any state of affairs in our mental life that is experienced as chronically uncomfortable, or as seriously damaging our efficacy in dealing with our everyday life, whether intellectually, emotionally, existentially, socially or otherwise. Hopefully, such dysfunction is curable; although we may not ourselves now know how to cure it.
Some psychologists imagine 'the mind' (or psyche) as a kind of cupboard, with the top shelf containing conscious mental items, the middle shelf subconscious ones and the bottom shelf unconscious ones. The trouble with this viewpoint is that it implies the mind to be some kind of entity, made of 'mental stuff', suspended somewhere in our heads, with a structure of some sort such that, by analogy to diseases of the human body, parts of it may be wrongly constructed or be misplaced or missing or extraneous or inappropriately moved about.
Furthermore, the contents of this cupboard (the said 'mental items') are identified principally with 'ideas', a catchall term including units of information, intentional events and bits of emotion, which are themselves viewed as 'entities' of mental substance. The motions of these entities, within a shelf and from shelf to shelf, make up the inner life of the psyche. It is not made clear how these entities arise, change, move and depart – whether spontaneously (inexplicably), by interaction with each other (like billiard balls, subject to causation), and/or by the will of some additional entity (a person, a who) placed adjacent to the cupboard.
Also, we might ask: what makes an informative idea cognized, an intentional idea willed or an emotional idea valued? Where is the self in this account? These peculiar qualities are left unexplained. This currently popular model of the mind (in origin partly Cartesian, partly Freudian[9]) is obviously simplistic. It fragments and reifies excessively. It fails to explain mental events convincingly, and indeed considerably obstructs explanation, being essentially *mechanistic*.
Additionally, it leaves the relation of the mind to the brain (and thence body) as a mystery, since it suggests a duplication of functions between mind and brain – an inexplicable redundancy (called 'parallelism'). Substituting for it a purely materialistic equivalent (a 100% 'neurological' model), as many try today, is no solution – for though the substance is changed, the structural and causal problems remain.

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[9] The historical question deserves extensive study, of course. The Freudian model is perhaps more abstract, fragmenting the 'psychic structure' into ego, id and superego, or again into conscious, subconscious and unconscious, and referring to 'energy charged elements'; but it comes to the same mechanistic portrayal of the psyche, which is aetiologically misleading and sterile.

My own analysis of the psyche, in the present work and elsewhere, acknowledges no such scenarios. I refer to a material body including a nervous system, a mental 'matrix' on which cognitive items are *temporarily* displayed (memories, imaginations, mental feelings), and a soul in which *events of* cognition, volition and valuation properly occur. This means that *there is no storage of mental items as such, either in the mental matrix or in the soul*. Whatever occurs in our 'mental life' that requires storage can only be stored on a material plane, supposedly in the brain.

In the latter perspective, mental disease cannot be located in the mental matrix, since everything occurring there is a mere fleeting projection of images or sounds or other phenomenal chimera. It might be located in the brain, as stored data items of questionable accuracy or value, and/or as neurological or physiological dysfunctions. Or it might be located in the soul, but not as something stored or structural or mechanical, only as repeated personal choices of a certain kind in the face of certain recurring influences and terms and conditions.

The 'conscious' and the 'subconscious' are both volitional, i.e. actions or states of the soul – some of which have mental and/or physical outcomes, but not all of them. The subconscious differs from the conscious only in degree: 'involuntary will' involves minimal, ad hoc awareness, while 'voluntary will' involves broader, more comprehensive attention. The psyche is thus essentially *not a mechanical system*, though some mechanical forces (physical and mental conditions) may affect it, and though the soul may be influenced by mental and physical objects of consciousness.

The 'unconscious' is not part of the mind, but in its *material* infrastructure, the nervous system. Strictly unconscious actions or states are not volitional, but mindless; they are generated by the nervous system, like the autonomic motor system functions (automatic breathing, heartbeat, etc.). The psyche is not occupied by 'entities' other than the soul and images flashing in the mind – the other components are not entities, but intentions, actions and states of the soul, as well as movements and changes caused by the soul or the brain of mental images.

It is wise, therefore, to avoid ontologically misleading terminology. Epistemologically, note well, conscious and subconscious thoughts, intentions, emotions or drives are ultimately *observable* by introspection – the former more easily and clearly so than the latter. On the other hand, 'unconscious' thoughts, intentions, emotions or drives are necessarily *inferred*, i.e. things we assume by implication from things observed, by adductive logic. For instance, if we speak of 'a conflict', we need not mean something actual and concretely expressed, but may refer to something abstractly known to potentially occur.

For example, if agent A at once believes (or wants) something X and its opposite notX (as often happens) – we can characterize this situation as a potential conflict, even though the agent A may not have become aware of it or yet experienced any unpleasant consequences from it. There is an implicit, objective conflict that we can logically infer from the two beliefs (or wants), knowing that if A should ever try to realize them both together he would be bound to fail, since X and notX are incompatible.

In this view, then, the concept of mental disease proper, as something not chosen, should be referred to the brain – while what concerns the soul cannot strictly speaking be so characterized, being an issue of freewill, but should be regarded as the domain of morality, ethics or 'spiritual path'. Even so, as shown further on, the essentially free soul can still get entangled in some pretty confusing situations, like bad habits, obsessions and compulsions, so we may use the term 'mental disease' loosely with reference to such hard to untangle situations. As we shall explain further on, too, personality disorders are rooted in our ego construction.

With regard to 'curing' such mental diseases, the following generalities are worth adding. A cause is some behavior or character of the soul, which generates, sustains or amplifies that which we consider as a disease. A cure is something that will prevent, remove or attenuate the disease. The cure does not necessarily pass through knowledge of the cause, though such knowledge is often useful and sometimes essential[10]. Once the cause has

[10] However, excessive 'psychologizing' throws doubts gratuitously and feeds baseless conjectures, producing identity problems. The ensuing mental destabilization provides intellectual pretext for what are essentially (futile if not harmful) ego-building activities.

produced its undesirable effect, the cause may no longer be the issue, except insofar as it may be repeated[11]. If the cause keeps recurring, the effect may recur successively with about the same intensity, or it may snowball. The cure may sometimes be aimed at neutralizing the cause, and thence indirectly the effect. Or it may be aimed at neutralizing the effect, directly. It is in any case wise to look out for eventual unforeseen side effects.

To take some examples of mental dysfunction: suppose a person has abnormally strong, unwanted, disturbing or uncomfortable, recurrent or persistent, thoughts, dreams, inner images or sounds, hallucinations, feelings or emotions. As exposed in the present work, such events may have volitional roots or be more or less involuntary products of the brain. The precise diagnosis will vary from case to case, and guide treatment efforts.

To the extent that the brain is considered the issue, chemical, surgical or other physiological remedies might be sought. However, these can only be stopgap measures, to the extent that malfunctions of the will are involved. That is, in such cases, medicines can only mask the problem, not solve it. Moreover, they may in the long run be damaging, or at least become an obstruction to proper treatment.

For if the problem is at root volitional, 'psychoanalysis'[12] may be needed. That is, an effort to logically sort out errors of thought and behavior – whether by the subject himself (who may need to engage in theoretical studies), or with the help of a professional or capable friend. This may, of course, in turn call on behavioral changes, personal or interpersonal, such as the practice of meditation or the performance of kindly acts.

[11] Although reviewing a person's history, including interrelations with other people, can help clarify and modify current behavior and emotions, the causal relations are far from determining, since humans are essentially volitional beings. The patient is thus made to vainly cling to certain ideas, instead of being freed of them.

[12] N.B. by using this term, I do not mean to endorse any particular doctrine of psychoanalysis.

9. Will, Velleity and Whim

1. Cognition, volition and valuation

Our 'soul' is the core of our selfhood and of all our personal 'life'. From an ontological perspective, the soul has a variety of abilities of activity, or *functions*, which may be classified into three broad groups: cognition, volition and valuation.

Epistemologically, it may be that we become aware of soul as a distinct 'entity' by imagining it at the apparent common center of all cognitive, volitional and evaluative experiences (a process that might be called 'intrapolation')[1], and by conceptual suppositions. But we must also admit that our soul has direct self-awareness, as well as direct awareness of these most intimate experiences (viz. cognitions, volitions and valuations). For only the admission of such direct evidence of the self and its functions, which we have labeled 'intuition', can explain our ability to discern *particular* acts of cognition, volition or valuation, even when such acts have no manifest phenomenal outcomes.

The soul, in this view, is a distinctive entity, having per se no phenomenal aspects, unlike mental and material entities; whence we may suppose it to consist of a special substance (say, 'spirit'). This intuited inner self is, as we have seen, to be distinguished from its surrounds, namely: the mental phenomena it perceives, the physical phenomena it perceives in its own body and beyond it (the latter including, as well as the apparent physical world, some supposed perceivable effects of other souls).

Thus, we have *four theaters of experience* to consider: the innermost (in the sense of 'in the soul itself'), the mental (for that soul), the bodily (for that soul) and the external (beyond one's own body)[2]. The different 'distances' implied by these terms are of course relative to the soul, and are based on the varying powers of cognition, volition and valuation the soul has in them.

The basic functions of *cognition, volition and valuation are operative in each of these four regions* (the inner, mental, bodily and external). Their *primary* theater is, however, the soul.

Cognition refers primarily to an event in the soul, the event of *being conscious of some specific thing*, whether that object be within the soul itself, or a mental or physical phenomenon beyond it. Cognition is what happens on the soul's side of the consciousness relation between subject and object. It is the 'business end' of all cognitive processes – where things 'click'. Sensation, imagination and reasoning are not *per se* acts of cognition, but processes that present some concrete or abstract data to the soul for cognition. The physical organs and signals of sensation do not in themselves constitute perception, but at best make it possible. When memories or inventions are displayed in the mind, it is not the mind that perceives them, but the soul. When a concept is built, or a relation is proposed or an inference is drawn, it is the soul alone that understands.

In like manner, *volition* refers primarily to an event in the soul, when it directly wills something specific *within itself*, for all apparent volitions beyond the soul are only direct or indirect consequences of such inner action. Similarly, *valuation* is something spiritual (i.e. in the soul) before anything else. Only within the soul can the three functions be sometimes clearly distinguished, because in most cases they are very tightly intertwined. This is evident when we consider in some detail their interrelations in the four theaters of experience.[3]

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[1] For examples, we seem to look out and see from behind our eyes or to enjoy touch sensations from within our body.

[2] Although the latter three regions are all 'outer' relative to the soul, the mental and bodily domains may be considered relatively internal with reference to matter beyond the body, with the mental being regarded as closer to the soul than the bodily.

[3] One of the relations between volition and consciousness is well brought out by José Ortega y Gasset in an essay entitled 'Aspects and the Entirety'. Volition is needed by a limited consciousness to focus on different aspects of the object. Every appearance of the object is its response to the subject's questioning regard: the eyes move about the object (as we

a. *Cognition* (in a large sense, including all cognitive pursuits) uses volition as a tool in various ways.

- This is true often even within the soul. For instances: the intentions of words and other symbols are acts of will; it takes will to direct and intensify attention, whether directed inward or outward.
- At the mental level, the projection of mental images is often volitional. Cognition uses such projection for the fundamental acts of intelligence and reason, namely: mentally pointing at something, delimiting and segregating percepts, negating experience, as well as in abstraction and classification, formulation of hypotheses and alternative scenarios, making logical inferences, and of course use of language.
- At the bodily physical level, we use volition to prepare for and pursue cognitive objects. For instances: opening one's eyes and looking out, or turning one's head to face something, or pointing with one's finger, or reaching out with our hand to touch something, or moving one's whole body in space to change perspective.
- At the external physical level, we use volition to set up experiments, manipulating objects and moving them about, placing them in certain relations to each other, controlling their precise relative conditions.

b. *Volition* (in a large sense, including all outer consequences of volition) involves and requires cognition in various ways.

- Within the soul, although some volitions may be goal-less, volition is usually preceded by cognitions that identify ends and means for some larger volition, and so set the intention of the punctual volition concerned. Even in the case of whims, some exploratory cognition of inner and outer conditions may be involved.
- At the mental and physical levels, volition uses cognition not only to identify general goals and means, but also to reconnoiter the current environment and thus obtain the feedback from it that allows particular volitions to be tested and if need be corrected or more precisely pinpointed, which increases chances of ultimate success.

c. *Valuation* involves and is involved in cognition and volition in various ways.

- Valuation within the soul is itself, as a particular event, both a cognitive act and an act of volition. To evaluate something is to purport to identify its value in relation some norm, i.e. within a comparative scale – this is a cognitive act. Valuation then assigns a corresponding positive or negative intention to subsequent volition – this is a volitional act.
- Clearly, valuation does not occur in a vacuum, but in relation to a particular subject and environment – which have to be cognized, whether they are so rightly or wrongly. The subject may be the soul proper (e.g. in religious pursuits), or an erroneous identification of mental and bodily phenomena as the self (an ego), or the mind or body (e.g. in secular pursuit of psychological or physiological health), or supposed external souls or egos, or their supposed minds and bodies. The environment concerned in valuation is the apparent or assumed sphere of action and reaction of that particular subject.
- Valuation also occurs relative to cognitive acts – considering whether such act leads to truth or falsehood. In its primitive form, such evaluation of cognitions as such occurs ad hoc, with varying degrees of clarity and validity (or 'truth-value'). In more advanced form, this is what the sciences of logic and methodology purport to do: to find out exactly under what conditions in general, items of knowledge and processes of inferences may be judged valid or invalid.
- Valuation is involved in all, or most, volitional acts, since the latter are generally (except apparently for whims) oriented towards things seemingly of value and away from things judged non-valuable.

Note that all three functions of soul may involve verbal commentary, but do not have to. *Words* obtain their meanings by the soul's intention; they are also produced by volition, as mental projections of sights or sounds, or as physically spoken or written symbols. Words are sometimes useful; but sometimes they can be confusing.

- In cognitive contexts, words help us to record, order and communicate a lot of information, to an extent impossible without words. But words become counter-productive when they stop us from referring to fresh experience, and when we become locked into their symbolic patterns.

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approach or distance ourselves from or circle past it), 'viewing' different 'aspects' of it. *An 'integral' consciousness would have no need of volition, but a limited one cannot do without it*.

- In volitional contexts, words may be useful as learning or teaching tools, to transmit information or instructions from one person to the next. But they can also preoccupy our attention and hinder concentration on the job at hand[4].
- In valuation, one may occasionally use adjectives like good or bad to express one's intentions, but these words can become misleading if one forgets the essentially intuitive nature of valuation.

In particular, we should analyze the processes of *reading and writing*, consisting of complex series of both physical and mental acts of cognition and volition.

- Reading a text[5], one observes[6] letter after letter and then mentally compares these to shapes and sounds (which, incidentally, one may express mentally or orally) one has learned, and groups them into words one has previously encountered, whose meanings one has memorized (if such correspondences are lacking in one, one must of course research them).
- Writing implies first drawing from one's memory banks the shapes of the letters that form the words one wants put down (which one may, again, simultaneously utter mentally or orally), then moving one's arms, hands and fingers in the appropriate ways to draw (or simply type out) those shapes.

We can observe the intertwining of cognition, volition and valuation even *in meditation*, which may from the outside seem much more static than it is to the practitioner.

- The cognitive aspects are of course central to meditation: looking at some external object, or watching one's body breathing, or an emotional charge, or mental images and conversations, or inner reactions and attitudes – and ultimately, experiencing effects such as inner silence and stillness, and hopefully ultimately 'enlightenment'.
- The volitional aspects are numerous, too: physically sitting down and adopting an appropriate posture, keeping the pose and correcting it as and when necessary; attempting to suppress or reduce mental sights, sounds and thoughts, or at least to observe them with some inner distance; making an effort to have the right attitudes; focusing one's attention on some object, whether it be external (e.g. a candle), or bodily (e.g. one's spine or breathing), or mental (e.g. when reciting a *mantra* or visualizing a *mandala*, although these objects may appear automatically after a while), or non-phenomenal (i.e. intuited self or some function thereof).
- Valuation is also involved. Although it is ultimately incorrect to have a goal in meditation, people get into meditation with goals in mind, whether the grand goal of enlightenment-liberation or fusion with God, or more prosaic goals like reducing stress or finding inner peace and such. Moreover, as meditation proceeds, many valuations occur, helping to prepare, direct, generate and regulate one's cognitive and volitional faculties.

Evidently, then, cognition, volition and valuation are tightly knit together in most situations, although we can distinguish them in very simple situations within the soul. In view of that, it is worth noting that *influences* may impinge on all three. Although the concept of influence primarily relates to volition, it also concerns cognition and valuation.

- As regards cognition, although it per se is free of influence, we may well be influenced as to what we look out for, what we allow ourselves to see or not see, the directions of our research, and so forth. This affects the scope, though not the content, of our experience. We may also be recipients of conceptual information and methodology (which may be right or wrong), from our teachers or other sources. Naturally, all that will tailor our database in some respects, i.e. the knowledge context we refer to in our judgments will be affected; additionally, our manner of interpreting such data may be affected.

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[4] This is for instance evident in Tai Chi practice. As a novice, one uses verbal instructions as guides to movement ("turn left, advance foot, throw punch, etc."). But eventually, the movements become automatic, and any verbal remark becomes a hindrance to their performance.

[5] Preliminaries to reading a text may include movements of one's body (bringing it to the bookcase or desk), movements of one's arms and hands (opening the book, turning pages), movements of one's head and eyes (opening, orientating and focusing them).

[6] This visual act if for a blind person replaced by an act of touch.

- As for valuation, being essentially an act of will, it can be directly influenced. Our valuations do noticeably vary across time, and according to our situation. If we are attentive, we can spot the influences that cause their variations. Consider for instance a new car model: at first sight one may find it ugly, and then in time – possibly because of the 'lifestyle' advertising one is subjected to – one may find it on the contrary very attractive!

The innermost 'thoughts' and 'actions' of the soul are primarily wordless intentions, beyond all mental images or sounds. The latter are mere accessories of the thoughts of the soul, and all the more so are the physical productions that accompany mental events (speech, writing, symbolic gestures, facial and bodily expressions). Our study of causality appears finally as one of phenomenology, when we consider where it is thought and action originate, and distinguish that from their more superficial displays.

For this reason, in meditation we try to look into ourselves, more and more inwardly, contemplating *the roots* of our thoughts and actions. By sitting immobile and quiet, we gradually still all mental and physical noise, and can thus hope to apperceive the more subtle aspects of our inner life. That is, when the environment becomes less loud and the body becomes less manifest, and the mental matrix becomes sufficiently blank and calm, the arising of wordless intentions in our non-phenomenal soul may begin to be discerned. The 'still, small voice' inside us might be heard.

2. Velleity

A 'velleity' is an incipient act of volition. In a larger sense, velleity refers to a small but insufficient act of volition – i.e. one that was not brought to completion. Thus, velleity may suggest hesitation, to which we would contrast determination ('getting the job done', or resolve, resoluteness). But sometimes, velleity is intentional, in the sense that the volition is intentionally incomplete; we intend our will to be no more than inchoate, tentative. We may thereafter further develop it or interrupt it, or slightly shift its direction.

Thus, postures like willingness (a general openness) or readiness (a more immediate preparedness) to do something, are velleities that for the moment we do not necessarily wish to develop into full-blown volitions. However, note, such velleity is more than mere ability; it does imply a minimal movement of the will.[7]

Velleity can be detected by the agent through introspection (intuitive self-knowledge). If the act of volition concerned has already progressed beyond the confines of the soul, into the physical and/or mental domains, it may be detected by perception of some its phenomenal outcomes. In such case, the agent, or occasionally other observers, may then infer a velleity from outer events.

Many psychological concepts can only be defined and explained with reference to velleity. For example, the presentation of an ordinarily desirable object can only properly be called 'interesting' or 'tempting' to that agent at that time, if he manifests some velleity (if not a full volition) to go for it; otherwise, neither he nor we would know he desires it. A distinction is worth making in this context between a velleity *to do* something and one *not to do* something. For example, 'laziness' sometimes refers to a mere velleity not to work (thusly, if it is overridden by a more determinate act of will to work – else, it becomes a volition).

The concept of velleity is also important because it helps us to understand the co-existence of conflicting values. Although one cannot simultaneously fully will one value and will its negation, one can indeed have a double velleity – i.e. velleities for contradictory items. One may also have a mix of velleity for something and volition for its opposite: the latter dominates, of course, but that does not erase the fact of velleity. All this is also true for not-willing, of course. Thus, if one wants to introspect with great precision, one should remain aware of velleities as well as of outright volitions.

Velleities are an important tool for inner communications with oneself. It is mostly through velleity rather than volition that we register our intentions, the directions of our attention. We speak to ourselves through velleities, before we ever do so through words. Thus, I may verbally ask myself "shall I do so and so?" – and the term

[7] 'Eagerness' is another velleity. This brings to mind a dog pulling on its leash. The will is more than just willing or ready; it is held back from springing forth, till an appropriate opportunity appears.

'doing so and so' has meaning for me, not because I actually will so and so now, but because I just slightly lean in the direction of such a will (velleity). To intend "not-doing so and so", I would generate a velleity of so and so, followed by a willful arrest of further such volition. Thus, velleities provide the soul with a *wordless language* concerning inner volitions. This is occasionally extended out by symbolic artifices.

An important case in point, which is fundamental epistemologically, is the so-called "mental" act of ***negation***. That act is only partly mental, in the sense of referring to projection of a mental image. It is in large part a spiritual (i.e. in-the-soul) act, an act of intention – an act of velleity. When we speak of having *observed* the "absence" of some phenomenal object (say, a visual detail in the physical or mental domain), we are only partly referring to perception. We of course never in perception see absences; we only see presences. We can report that something is absent only by *comparing* the visual field tested to an imagination (wherein the object sought for is visualized). Only if we find *nothing resembling* the object imagined in the tested visual field, do we say: "it is absent". To "negate" something thus involves mental projection, but also a velleity of "putting" that mentally projected object in the visual field under scrutiny and then a velleity of "removing" it to signal the failure of the test. Only thus do we get an inner understanding of what negation means.

Another important case in point is the act of ***abstraction***, through which concepts are formed. This consists in focusing on some common aspect(s) of two or more experiences or concepts, while disregarding their differences. A selective 'blanking out' of contents of consciousness is involved, a negative intention achieved by velleity; we pretend some of what we observe is not there, so as to emphasize the observed similarities.

Another interesting example, also requiring careful awareness to observe, of such use of velleity is the following. When we think of other people or animals, we usually imagine them in action to some extent, often in relation to ourselves. The imagination of their physical actions is simply done by mental projection of their image going through certain motions, as in a movie. To imagine them imagining, we need only ourselves imagine what we would them to imagine, and intend or say "ditto in their case". But how do we 'imagine' their subjective dispositions or actions? Since these are not phenomenal, they cannot be mentally projected. Thus, we must enact them to some extent within our own soul. However, we usually would not want to enact them fully: for example, we would not ourselves actually hate Mr. Y just so as to imagine Mr. X hating Mr. Y. Instead, we would generate a velleity, just enough to point our cognition in the intended direction. And then we would of course add (verbally or tacitly): "ditto for Mr. X towards Mr. Y".

3. Whim

We have analyzed volition as generally involving cognition of surrounding terms and conditions, and possible alternative courses of action, followed by evaluation, through which one selects one's preferred goals and means. But it may be argued that such a description of volition is circular, since the cognition and valuation involved seem to imply prior acts of volition. Moreover, the imagination of goals and means implies the projection of mental images, which is itself often an act of will. Thus, the concept of volition may seem logically incoherent, unless we preempt such objections.

We have just to acknowledge that *some* volitional acts are primary, so that they do not themselves require prior cognitive research, mental projection of goals and means, evaluation or deliberate choice. Such volitions may be classified as *whims* or caprices (without pejorative connotation); for theoretical coherence, we have to admit such 'causeless acts' or 'initial impulses'. They bubble forth from within us, *ex nihilo*[8]. What is spontaneous about

[8] A whim or random act of will is in practice difficult to conjure. One may lack a useful end, but one's end may be said to be the implicit will to whim. In some cases, one's secret end may be the desire to seem whimsical to other people; i.e. one role-plays a whim. Still, supposing one clears our mind of such motives, the way a whim would work would be by attaching one's will to some passing event, e.g. opting right (or left) without regard for consequences. But then, has one not told oneself "I will opt to the right"? It could be therefore be objected that such decision of principle sets an end, becoming the motive. But we may reply that the decision itself *is* the sought after whim. So real whim is conceivable – at least with reference to the decision as to which way to whim!

them is that they are *uninfluenced*, they are not explicable with reference to any motive; but they still have a 'cause' in a larger sense: it is the acting soul. When we say "act of will" or speak about "freedom of the will", we should always remember that we mean more precisely: "soul's act of will", "freedom of the soul to will".

Whim is, in particular, required take action when one is in a quandary – when one values (or disvalues) a thing and its negation equally, or one is indifferent or uncertain either way. If whim did not exist, we would be paralyzed in such situations of even influence or non-influence in both directions. This specific case may be regarded as an additional argument in favor of the existence of whim, granting volition: if volition could not exist without some purpose in mind, it would often be blocked from proceeding. *A fortiori*, if freewill can go against the current of prevailing influences, one can will even more freely when influences are balanced, absent or unclear; the same power is involved in any case.

Some degree of consciousness is a *sine qua non* of volition. If no consciousness is involved in an act, it is not truly voluntary. So, whim should not be considered a blind, unconscious act. It suffices to define it as an irreducible primary. The first impulse to look into oneself or out at the world may thus be described as a dawning cognitive volition; it does not refer to prior research, though cognition accompanies it. The call-up of existing memories (information obtained in the past) may be similarly classed. Some imagination is involuntary, contributed by the brain without voluntary creativity: this can serve volition, without being volition. The act of valuation per se does not necessarily need to be influenced, although it may be.

Valuations must here clearly be distinguished from emotions; the former are voluntary positions or postures of the soul, the latter are reactions in the mind or body. Emotions do not necessarily or fully determine valuations. Emotions may cause later valuations to some extent, in the sense of influencing them. Indeed, they often do, insofar as most people consider their emotions as powerful arguments; they identify with them and are guided by them. But such emotions are themselves effects of earlier valuations; they are mental and/or bodily consequences of volitions influenced by such valuations[9]. Valuations are not necessarily rational, either. They may indeed be influenced by rational considerations; but however strong, such influence is never determining.

Thus, ultimately, all valuation is purely voluntary. Valuation gives or grants value. Things have value because the agent concerned has assigned value to them, period. Even when such act has objectives or objective justifications, claiming to be impartial evaluation, it is essentially arbitrary. This does not prove such valuations "false" – it just means they are intimate expressions of the self. Although one ought not identify with one's emotions, one can well identify with one's inmost valuations. So much for the issue of circularity in the concept of volition.

4. Inner divisions

How is it our right hand may not know what our left hand is doing, as the saying goes? What does it mean to say that we are often in conflict with our own self?

The self or soul is essentially one, but may partition itself in various ways. As we have seen, the soul is not an object of perception, but an object of apperception or self-intuition. Since it has none of the phenomenal qualities we associate with space (shape, size, location, etc.), but is a non-phenomenal appearance, it cannot strictly speaking, from an epistemological point of view, be regarded as spatially extended or as having an exact place. From an ontological point of view, however, we may either adhere to the same restriction (out of positivism) – or we may hypothetically project a spatial extension and position, if only as a convenient image (by convention).

It may be more accurate to regard the partitions of soul as occurring in time rather than in space. For the soul seems extended in time, which is an abstract concept even in relation to matter and mind, anyway. We presume that, although the soul is renewed every moment, it retains some unity and continuity across time throughout its life[10] – on the basis of which, we may acknowledge our personal responsibility for our past, present and future

[9] For this reason, incidentally, the attempts by some philosophers to build moral systems on hedonistic or aesthetic standards have little credibility. Such doctrines cannot guide valuation, because they refer to a consequence of it as the guide!

[10] See discussion of this in chapter 16.2.

thoughts and actions. This thesis may be upheld, without going so far as to deny our ability to morally break with the past and change course in the present and future.

Although some instances of partitioning of self can be explained by pointing out that the conflicting volitions involved actually occurred successively in time, it remains true that some conflicting volitions seem to be simultaneous[11]. It is the latter that we commonly map out as separate in space; although, strictly speaking, there is no reason to do so, i.e. we could equally well assume them as emerging from the same point of self.

The self or soul may be divided in a positive or negative manner. Such self-division is sometimes useful for purposes of self-regulation or self-control – as when we set up a 'moral conscience' to oversee our own compliance with certain higher standards, to ensure we are not swept away by the passions of the moment. Sometimes, the division is involuntary and unhealthy, causing self-damaging conflicts, reducing our ability to cope with life. Thus, division of the self is an issue of management – the manager in us must decide how much is needed and how much is too much.

We must distinguish in-soul conflicts (which occur in the self proper) and soul/mind-matter conflicts (which pit the self against its mental and material environment). One may *pressure* oneself to think or act in a certain way; this may be either in the sense of a will within the soul, or in the sense of a will pushing the mind and body in the direction concerned. Thoughts and deeds may be willfully *suppressed* for a variety of reasons: because they are sterile or foolish or painful or sickening, and so on.

Repression refers to an unhealthy situation, where segments of current or memorized apperception, perception, and conceptual thought are blocked from awareness, to a degree sufficient to ensure their (rightly or wrongly supposed) implications from being considered. *Oppression* refers to an uncomfortable situation, where the self at some level rejects an ideology – self-imposed under the influence of parents, society, religion, state, or other authorities – that is currently operative at another level. In the latter case, one's autonomy is at stake – an issue of self-rule or self-determination – because one does not (or no longer does) identify with the ideology, yet one is (or continues to be) guided by it in thought and action.

More will be said on such psychological conflicts in the coming pages.

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[11] See discussion of 'double velleities', higher up.

10. Affections and Appetites

1. Valuation

Let us now look more closely at the main affections or appetites, which are among the *major influences on volition*. Our increased understanding of volition and influence can help us clarify concepts such as: liking and disliking (affections), desire and aversion (appetites), hope and despair, confidence and fear, certainty and doubt, and esthetic responses to beauty and ugliness. These can all be referred to as 'values' or 'disvalues', things one chooses to pursue or avoid. They are all causal concepts, in that they motivate and explain volitional action; they are 'allied' to volition.

Values are at least expressed through velleities, if not through full volitions.

Note first that each of these pairs of terms refers to opposite sides in a continuum, the middle point of which is labeled indifference. Thus, for instance, 'desire' refers to *a range* of positive responses, and 'aversion' (or desire-not) to the corresponding *range* of negative responses. Special terms may be used for the extremes. Thus, the more intense expressions of liking are called love; and those of disliking, hate. Indifference, as the word suggests, means 'the object makes no difference to the subject' – i.e. the latter is uninfluenced one way or the other by the former.

Note that *sometimes pleasure and pain are mixed*; i.e. the same object may arouse pleasure in some respects and pain in other respects. No contradiction is involved; it is a real possibility. *Sometimes, too, we are not sure whether what we feel is pleasant or painful*. This is different from mixed feelings or indifference, but refers to confusion; it is not an ontological position, but an epistemological one.

Although the term 'affection' refers primarily to likes and dislikes, and 'appetite' refers primarily to desires and aversions, they are also used more broadly for all valuations; presumably, because we are affected by them in our responses, and like hunger and thirst they involve some drive to certain actions by the agent concerned.

A drive may be said to have positive or negative polarity, or to be attractive or repulsive, according as its inclination is toward or away from the object; and the degree of the drive signifies its power to influence, how easy or hard it makes pursuit or avoidance of the object, how likely or unlikely it is for the agent to go that way. The same agent may at the same time have "contrary drives", i.e. drives with incompatible objects.

One may at once desire X and desire notX; one may even also desire not to desire X and desire not to desire notX. That is all logically acceptable. But it remains true that if one desires X, one does not *not*-desire X: the law of non-contradiction applies if the presence and absence of one and the same drive is under discussion. Furthermore, one cannot hope to eventually realize both the incompatible objects at once: if the desire for X comes true, the desire for notX will not. Moreover, one is not forced to desire any one thing or its opposite: one may remain indifferent. That is, I do not desire X and do not desire notX may both be true.

What we value today, we may disvalue or be indifferent to tomorrow. New cognitions, volitions or valuations can change our values. Our values are therefore often hypothetical, rather than categorical. We have more or less conscious *hierarchies* of values. Some values take precedence over others, come what may; others do so conditionally. Some values are basic and broadly influential, informing many of our actions over the long-term; others are ad hoc short-term responses to current opportunities. A drive may be strong, until its object is shown up to be incompatible with the object of some more important drive; in that event, the initial drive is considerably deflated and may even disappear completely. One drive may therefore be consciously used to resist or overcome another. Our values are thus in a sort of dynamic equilibrium, rather than statically set.

Emotions, of course, suggest valuations. The simplest emotions are physical pleasures and pains, sensations caused directly by external physical stimuli (e.g. a caress or a flame) or purely by physiological processes (e.g. satiety or hunger). More complex are psychosomatic emotions (sentiments), which are physical feelings with 'mental' causes; they are visceral, yet we know them to be due to events in the mind or evaluations in the soul.

Bodily emotions are often a mixed bag of sensations and sentiments. More subtle are mental emotions, which seem to occur in the mental matrix rather than in the physical domain. Possibly, all bodily emotions are mental projections; possibly, apparently mental emotions are really physical – it is hard to say for sure.

In any case, note well, such classifications of emotions (as pleasures, pains; and as sensations, sentiments, mental emotions) should not cloud the fact that they vary greatly in quality and intensity. For instance, a pinprick is hardly comparable to a pang of hunger.

> It is interesting to note that even physical pain may be variously experienced and influential, according to our perception and judgment of it. This is made evident in experiments using the 'placebo effect', where a patient's pain is attenuated by fake pain reliever. Not only does the patient feel less pain, but also the fact is measurable through instruments attached to his brain. Note also the opposite, 'nocebo effect' – by which a misplaced belief gives rise to a physical, mental or emotional problem. Such 'effects' were cunningly used even in ancient times, by physicians and religious healers (to heal) and by witch doctors and the like (to heal or harm).

In any case, to repeat, all such concrete emotions are relatively superficial percepts and must not be confused with valuations, which occur and are intuited in the soul and are volitional acts. Their being willed does not mean such most inner values are artificial, affectations; quite the contrary, they come from the depths of self. Our knowledge of our valuations is self-knowledge. Concrete emotions and expressions of will give rise to various equivalent *abstract* notions of value, like good or bad. Valuations, note well, need not be verbal or even very conscious; indeed, they are usually wordlessly and subconsciously intended. We do not have to say, mentally or out loud, "this is good" or "this is bad" or "this is neutral", to mean it.

Something valuated is called a *value*. Positive values (values) are pleasures or pleasant (if emotion generating), or beneficial to one's self-interest, or good (using more abstract norms, eventually moral principles). Negative values (disvalues) are pains or painful, or harmful or bad. Indifferent things are neither valuable nor the opposite. 'Self-interest' here may be understood variously, as real or imaginary, probable or improbable, of interest to one's soul, mind, body, loved ones, possessions, or more abstract concerns.

The terms 'good' or 'bad' are here intended indefinitely, to mean 'valuable' or 'not valuable'; we use them because people do so. We acknowledge that people assign various contents to such general terms; we need not at this stage give them any objective status. Note that something may be neither good nor bad (indifferent); also, something may be good in some respects and bad in other respects (of mixed value). Therefore, though good and bad are ultimately meant as opposites, they are not logical contradictories.

2. The main valuations

There are many sorts of value concepts; below we try to define some of the more commonplace and so significant. Notice what they have in common: *they essentially are or involve cognition (some belief or consideration), and for this reason are able to influence our volitions*. Their repeated or constant influence on us explains our attachment to them, our immersion in pursuing or avoiding them. A value may be more or less long lasting. Our consistent valuations become our personal *attitudes* or dispositions.

One ***likes*** what one considers positive in some sense, in some way; one *dislikes* what one considers negative in some sense, in some way. One may like or dislike something without doing anything about it, although normally one makes some effort to go towards or away from it. Various terms distinguish varieties of likes and dislikes. For instance, *love* is a liking response of some high degree to people or animals (or even sometimes, though perhaps inappropriately, to inanimate objects like a house or a country); and *hate* is the opposite pole. Love and hate usually imply certain bundles of emotions and actions. Some people think they love someone, but are in fact only infatuated or sexually aroused. Hate, on the other hand, is rarely more superficial than it claims.

Desire signals an expectation of pleasure or some other benefit if some course is pursued; *aversion*, an expectation of pain or some other disservice if some course is pursued. The more feasible the required course to gain/keep or avoid/lose, the greater the impulse. If one realizes the object is unattainable, all the desire or aversion for it is lost. The desire or aversion for something usually includes the conation to have a certain kind of interrelation with it (e.g. desiring a woman, to make love to her or live with her).

Not all valuation is of the nature of desire or aversion, note well. What distinguishes them is that they usually lead to some sort of appropriate action or inaction, although they may on occasion be consciously ignored or resisted. Desire is expressed as grasping if we do not yet possess its object, and as clinging, if we already have it. An aversion is on the contrary a desire to steer clear of or get rid of the object.[1] If one succeeds in attaining the desired good, the desire is said to be fulfilled; if one fails, it is frustrated.

We of course often use specific terms for *specific* desires (or aversions), usually with reference to their object. Thus, for examples, thirst is desire for water or other liquids, hunger is for food (gluttony for excessive food), lust is for sexual gratification, greed for more wealth (money, possessions), vanity for admiration (including fame), power-lust for social dominance, curiosity for learning, and so forth. But many desires (or aversions) have not been given specific terms; we just say "the desire to …".

Satisfaction or *dissatisfaction* refer to our reaction upon fulfillment, or admission of failure to fulfill, a given desire or aversion. *Contentment* or *discontent* refer to our no longer having any, or still having some, outstanding desires and aversions; or at least to not-attaching, or attaching, undue importance (degree of value) to them. Thus, these latter concepts concern not one object of desire, but one's relation to desire more generally (in life as a whole), or at least in some broad domain (e.g. at work or at home).

Hope and *despair* also involve the thought that good or bad may come; but they are more passive than desire and aversion. Hope is the conviction of the possibility that something considered good will occur or something considered bad will not occur. The 'possibility' may be correctly or incorrectly assessed, with reference to solid data and tight reasoning, or as a mere consideration of 'conceivability' or 'possibility in principle', or as an act of faith or as a deliberate self-delusion. Despair is, strictly speaking, the lack of hope; though, in practice, the term is used more loosely, if there is almost no hope.

Despair may also be defined with reference to the possibility that bad occurs or that good not occur. If the good or bad event under consideration seems impossible, it gives rise to neither hope nor despair. In view of the ambiguity in the assessment of 'possibility', the proverbial cup may be considered half full or half empty. In hope, the good or not-bad seems probable; in despair, the bad or not-good seems probable. Even if one holds all the cards, one can only hope to fulfill one's desires, since one can never be sure to be alive a minute from now. Despair is rarely fully justified, because the unexpected may well happen.

In any case, note, hope and despair relate to future possibilities or probabilities that may be actualized either by one's own will or forbearance – or due to forces beyond one's control. One awaits the object of hope, but one does not necessarily act to attain it or even have to consider that one can do something about it. Hope may be a *wish* rather than a will for some future good. People often hope in God, or in the promises of some politician or potential benefactor, or in next week's lottery draw. They may feel some present pleasure at the thought that they may one day be blessed with this or that. Much fantasy is generated in this manner, keeping them entertained and superficially happy.

Trust and *distrust* are concepts in the same continuum as hope and despair. Whereas the latter concern the possibility of good or bad or their negations, the former concern moreover their *probability*. An event is not only considered, but moreover expected. Thus, trust is belief that good is likely to occur, or bad is unlikely to occur; while distrust is belief that bad will come or good not come. One may trust or distrust a person, oneself or someone else, with reference to future responses to events, usually basing the judgment on the evidence of past conduct.

Patience and *impatience* refer to our conduct relative to an expected event, according as one awaits it without worrying over it, or one wishes or tries to accelerate it. In the latter case, one not only desires or is averse to the

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[1] Some of these observations are gleaned from Buddhist psychology (see the twelve "*nidanas*"), which offers a very detailed dissection of desire or aversion: they begin with a sensory stimulus ("contact"); this gives rise to pleasure or pain (an experience or evaluation); we tend to adhere to the pleasant or to be repelled by the unpleasant ("grasping"); this in turn impels us to act accordingly i.e. do what is necessary to gain and/or keep or to avoid and/or lose that which gave rise to the initial sensation ("clinging"). I have personally found this analysis of great practical utility to tame unwanted passions. *The series can be interrupted at any stage*: one can preempt the initial contact; or stoically ignore the pleasure or pain; or dismiss the tendencies to grasp and cling. If one opportunity is lost, the next one can still be used.

object, but additionally concerned with its timing. The attitude of patience is based on the belief (right or wrong) that the external events or volitions concerned will play out in time and favorably, or at least in a manner one can adequately respond to, so one remains passive; whereas, in the case of impatience, one is doubtful of the outcome or timeliness and so one thinks interference is called for.

Confidence and *fear* both anticipate a more or less specific danger; they differ in the assessment of one's ability to deal with the dangerous entity or event. Both, then, foresee the possibility of some negative event. But confidence suggests potential strength or efficacy, fear potential weakness or inefficacy, relative to the perceived or assumed threat.

The degree of confidence or fear varies, according to the size of the danger and of one's expected strength or weakness. The assessments may be justified or not. The danger may be real or imagined, explicit or implied; the estimate of strength or weakness may be objectively accurate or not, admitted or not. Excessive confidence can be rash; excessive fear is timidity[2]. Such excesses respectively underestimate or overestimate the danger, and/or overestimate or underestimate one's resources for dealing with it.

Confidence is sometimes due to foolishness and conceit, rather than to lucid assessments. The ego struts around, convinced of its adequacy on very superficial grounds. In some cases, this leads to success, because inner resistances are overcome or because other people are fooled by the show. But such egotism is ultimately brittle, and not true confidence. We may suspect secret fears to underlie it; these are best faced and dealt with, to secure genuine confidence.

Fear is compatible with hope, though often allied with despair. One may, note well, fear the inevitable – for instance, one's eventual death; or one may *resign* oneself to it. A fear may come and go, according to one's lingering on its object or one's estimates of the conditions and probabilities. Thus, one may for a moment fear the sudden approach of a black hole to our planet, and then forget all about it. Or one may fear an enemy, and then find him weaker or oneself stronger than previously assumed and regain confidence.

Fear tests one's will. *Courage* is overcoming the negative influence of fear, i.e. retaining the ability to act more or less effectively despite a perceived threat; *cowardice* is the opposite attitude. Having courage does not mean making a macho spectacle of oneself; it consists in keeping a cool head, and making a fair assessment of the danger and one's resources, then acting as conceived necessary, doing the best one can. Bravery implies not being shaken when taking risks, because one can handle victory or defeat with equanimity.

Fear may give rise to an urge to flight (avoid or evade the object feared) or one to fight (parry or strike back at it). In combat, the most efficient way to deal with a threat is sometimes simply to bypass it altogether; it is sometimes wiser take a defensive stand, rather than allow the threat to grow; in some cases, counter-offensive measures are called for, to neutralize an aggressor; and in others still, preemptive attack, to make sure one is not surprised. The choice of means depends on one's assessment of the danger and one's resources.

Fear in itself is not an emotion. But fear may in some cases produce an emotion of *fright*, involving a hollow feeling in one's solar plexus or tightness in one's throat, as well as other symptoms, mental ones like stress and physical ones like tense neck and shoulders, faster and louder heartbeat, or skin sensations and hair raising. The exact reaction depends on the degree of danger relative to one's self-assessment. Fright may be a healthy reaction, or it may be neurotic. In the latter case, it gives rise to anxiety feelings, the object of which is not clearly known, i.e. only known at a subconscious level; false explanations may be proposed, so that the logic involved becomes tangled and confused.

Fear, especially in conjunction with fright, may also arouse *anger*, an impulse to incapacitate (violently harm or destroy) the dangerous person; anger also involves a vengeful motive, to punish the frightening person. 'Cold' anger is distinguished from 'hot', according to the degree of rational control outwardly maintained in performance. *Hatred* is an emotional response to a person or an animal that has hurt one in some way. If something feared has actualized, we may for that reason hate its assumed author. But one may also hate the latter

[2] Paranoia occurs when one unjustifiably regards oneself as personally persecuted, i.e. when one largely imagines that other volitional agents intend to obstruct or hurt one, and one feels inadequate to deal with such a threat.

for causing one fright or anger, insofar as these are also painful in themselves. Hatred may even turn on God, if He is regarded as the malicious controller of the events feared[3].

One may fear oneself. If for instance one has in the past repeatedly betrayed some promise one has made to oneself, displaying lack of will that has had disastrous effects on one's life or on loved ones, one may consider oneself untrustworthy. This may give rise to strong negative emotions, some of which may be chronic.

Certainty and *doubt* are also important valuations – which have a more epistemological context, signaling the degree of reliability or unreliability, or the completeness or incompleteness, of certain relevant data, concepts, propositions or inferences. One may also have certainty or doubt regarding how oneself or another person will react in such or such a situation of interest to one. Such evaluations of data or people are of course often very significant to our actions, determining which way we will go, or influencing us in taking preemptive measures. Certainty can be encouraging and energizing, but it may occasionally give misleading confidence. Doubt can make one hesitate or be demoralizing, but it may also occasionally stimulate creativity.

There are many other possible value judgments, of course, but the above are probably the most influential in our lives. Some attitudes have rather personal relevance (e.g. self-respect, pride, shame, guilt feelings); others are more directed at other people (e.g. admiration and contempt), or more relational (e.g. kindness or cruelty); though all may be involved in motivation to some degree and have social implications. Some of these valuations have some rationale; but many can be absurd. For instance, envy of another's external possessions (e.g. house or wife) is understandable although not commendable, but envy of another's qualities (e.g. youth or courage) is logically incomprehensible though common.

The esthetic responses towards *beauty* and *ugliness* are also worth mentioning, though more difficult to define. These appreciations of course often relate to our emotions. For examples, some rock music or contemporary paintings arouse great irritation in me; whereas in some other concerts or museums, I have been moved to tears by the beauty offered. But hearing a beautiful piece of music or seeing a beautiful painting does not always arouse a discernible response. Even so, the work of art somehow seems 'objectively' beautiful. Yet, we cannot honestly claim absolute objectivity, since different people have different responses; and even the same person may vary in his or her response over time. So, this field has much mystery. Which is perhaps its attractiveness.

Our various passions (desires, aversions, etc.) have hierarchies relative to each other. These hierarchies can in time become changed; so that, a value that was originally subsidiary to another, eventually becomes an end in itself, or at least a subsidiary of some other value. For example, a man may struggle to become a sports champion, or some other public figure, not primarily out of desire for fame or fortune, but as a way to attract the attentions of girls! Later, he may get to love his profession for quite different motives: for the spiritual lift it gives him, or because it keeps him healthy, say.

3. Ethology

The study of valuation may be called ethology. Ethology differs from ethics, in that it sets no standards, but merely studies the ways values arise, combine, conflict, and pass away in people, treating valuation as a neutral object of study.

Looking at the above descriptions, we see the many factors each concept of valuation involves. Memories, abstract beliefs, anticipations, imaginations, emotions, all come into play. Everything is weighed in the balance. Attitudes are formed; policies established. There are velleities, in the sense of volitions about to happen. Obstructions and helpful aspects have their impact. Then action may burst forth and grind on. A series of consequences may follow, some of which may boomerang on the actor.

Many other concepts we commonly use in psychological discourse can similarly be clarified. We can thus gradually build up a more or less structured lexicon of psychological terms, with reference to the basic concepts

[3] Needless to say, I am not suggesting or approving of such an attitude, but merely noting that it can and does occur. Fear of God need not make one rebellious, but may instead make one submissive. In Judaism, fear of God, in the sense of submissiveness and obedience, is regarded as the foundation of virtue.

of cognition, volition and valuation. The importance of all three functions should be stressed; many writers clumsily ignore or conceal the one or the other. Flowcharts can be drawn, highlighting relationships.

Values of various kinds with various objects are often intertwined in a complex *value system*. Values are in principle changeable; but some, being parts of such a system, have deep and lasting influence on a broad range of volitional acts.

The value system may include a bundle of attitudes that one possesses since as far back as one can remember, so that one may be deeply attached to them as the very expression of one's personal identity. Some values are pounded into us by parents or school. One may as a youth be influenced by the media (literature, movies) into thinking some attitude is valuable; and then discover when one meets certain people or faces certain challenges that the values transmitted to us were misrepresented. Some value systems, or parts of systems, are adopted by resolution, for ideological (ethical, religious, political) motives or to belong to some social group; these may remain firmly rooted once planted, or come and go. Many attitudes are acquired on the basis of life experience or personal reflection. Some people learn little from life; some evolve as they age.

The acquisition, maintenance or loss of values is rarely arbitrary, but usually modulated by life experience. One could draw an analogy between the induction of values (for volition) and the induction of truths (for cognition). In cognition, something may be supposed to be true, but if it makes false predictions, we come to doubt and reject it. Similarly, in volition, something may be supposed to have value, but if it makes false promises, we come to doubt and reject it. However, I am not sure this is always a reliable yardstick; people are willing to suffer a lot, before admitting disillusionment.

Let us not have an overly arithmetical or mercantile approach to values. In practice, I have found true the adage: "virtue is its own reward, vice its own punishment". This may, of course, be considered as an ethical statement, a moral judgment, in view of the words virtue and vice. But on closer inspection, one sees that the words in question refer to certain behavior patterns, so that the principle does not set specific standards or criteria, but is axiologically neutral.

It is one commonly intended sense of what we call 'the law of causality' – a statement that, with regard to human volition, just as in the realm of causation, **actions have consequences** (more or less predictable ones, in the short or long term). If one behaves in psychologically or existentially destructive ways, one will indeed likely eventually be accordingly destroyed; and inversely, if one thinks, speaks and acts in a healthy manner, one will naturally have (gain, keep) self-confidence, self-respect, serenity and contentment, and similar marks of mental health and spiritual dignity. Generally, we reap what we sow.

The ways of 'virtue' or 'vice' are known by experience, i.e. they are forms of conduct so classified because they have been found by lucid people over time to be conducive or antithetical to life. I would express virtue summarily as ***dignity and decency*** – acting out of self-respect and respect of others, in the best senses of those terms. Vice is the opposite behavior, causing shame and guilt (even if one feigns indifference or pride) – to be avoided.

Of course, dignity and decency must be real and not pretended, and it takes effort and sensitivity to intuit them correctly. They are interactive, each affecting the other; so that both must be worked on to ensure their enhancement and stability. Virtue is not the means to some other goal and not the end of some other practice, but both the means and the end. The term "virtue" intends "it is the means" and the phrase "its own reward" intends "it is an end in itself". Similarly, mutadis mutandis, for vice. These, then, are ways of being.

The virtuous stand straight; the vicious are twisted up inside. This is an ages-old ethological observation, which leaves the ethical choice to each one of us. It should be noted that it is only an approximation: it applies to the individual considered in abstraction from his social context. It refers to the inherent justice of our mental and spiritual makeup – but makes no claim to the existence of automatic social or natural justice, or of theodicy.

The reason why the principle applies to the human psyche, and not necessarily to human affairs, is due to the interaction of individuals in society. If everyone were virtuous, then virtue would perhaps be its own reward even in a social context. But since every society is a mix of virtuous and vicious elements, consistency requires the principle to break down in the larger context. The same consideration is applicable to the natural environment.

Thus, to take an extreme case, a wise and kindly person (indeed, an innocent babe) may well be harmed or killed by the likes of Hitler; and some such fools and criminals do observably end their days in material comfort and social immunity[4]. A natural disaster may sweep away nice and nasty people in the same wave. Similarly in more common situations – virtue does not guarantee material or social rewards, and vice does not guarantee material or social punishment. Social and natural forces and upheavals often pay little heed to the inner status of individuals.
Nevertheless, the virtuous person has spiritual or psychological riches that cannot be stolen or destroyed, and the vicious one has inner deficiencies that no external wealth or welfare can compensate. The former is a winner, the latter a loser, come what may on the outside. That fact provides consolation.
The Dhammapada, a 3rd Cent. BCE Buddhist text, puts it very nicely (v. 105)[5]:

> "*…the greatest of victories is the victory over oneself; and neither the gods in heaven above nor the demons down below can turn into defeat the victory of such a man.*"

In practice, the condition of being at peace with oneself and having **self-esteem** depends on a number of factors. If any of these is lacking or insufficient, one is sooner or later bound to suffer proportionate degrees of inner conflict and self-contempt (or even, in extreme cases, self-hatred).

a. Self-esteem depends first on *integrity* or self-possession, i.e. doing what one values and abstaining from what one disvalues. This refers principally to one's present behavior, but past behavior may impinge on one's present self-evaluation (though such impact may diminish with time and appropriate efforts). Clearly, if one lacks self-control, if one's actions are not in agreement with one's thoughts, one is bound to feel one is failing or betraying oneself and develop inner tensions. For example: if one has a 'bad' habit, one should 'logically' give it up to ensure one has a 'good' conscience.

b. It follows that the stability of self-esteem depends on the *reasonableness* of the demands one makes on oneself. If one makes impossible demands, one is on a neurotic course that inevitably shatters inner peace. If one sets one's standards too high, if one lacks composure and pressures oneself (e.g. through anger or whining) to act in unwise ways – one is behaving disrespectfully towards oneself. One can only realistically demand what is naturally possible and currently within reach of one's actual capacities – no more. Of course, one can seek to surpass one's current limits to some extent; what is possible or impossible in a given situation is open to some debate. For examples: it is reasonable (in most circumstances) to demand one go up to one's boss and ask for a raise; it is unreasonable (for most people) to demand one have the courage to climb Mt. Everest.

c.Self-esteem is primarily a function of *sincerely trying*; it does not ultimately depend on success. So long as one has in truth made all appropriate efforts in the direction of one's values, one is in reason free of blame for failure due to events beyond one's control. Of course, how much is truly one's best shot is open to debate. In the face of failure, one may try again, and again; perseverance is not excluded. But reality may still prevent ultimate success – and this should not in principle affect self-esteem. This is a corollary of the previous point. For example: a man tries to save someone from drowning and fails; if he tried his best, but the currents were too strong, his conscience is clear, and his self-esteem unaffected. If he feels dissatisfied with his performance, he may decide to train himself to swim better, for next time – but that is another story.

d.All the preceding points suggest that peace of mind and self-esteem are possible irrespective of the nature of one's values. But that is unrealistic; it is too relativistic a position. Balance is not a product of mere conventions, be they individual or collective. It is not just a function of one's belief system – it is also determined by objective circumstances. There is such a thing as 'human nature'; people are not infinitely pliable and adaptable. The psychology of self-esteem also depends to a considerable extent on the *constructiveness* of one's values – their healthiness, their life enhancing power.

One has to choose one's values intelligently. If one's values are contrary to human nature, they will sooner or later have a negative impact on one's inner harmony and self-esteem. Because the harmful effects of unnatural values may take time to come to fruition, one may in the short term be lulled into a false sense of serenity and

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4 To prevent which we have a judicial system.

5 I do not know who is historically the earliest proponent of this truism. However, I personally finally become convinced of it when reading the aphorisms of Marcus Aurelius (121-80 CE – Roman emperor and Stoic philosopher), and I remember that it greatly affected my behavior thereafter.

efficacy, but later on – sometimes suddenly and with a vengeance – one will discover the full force of one's errors. Examples of this abound, and are worth reflecting on.

Someone living in a society where certain beliefs and practices intentionally causing harm to other people are common might on the surface seem perfectly at ease within this framework (e.g. black magic or racism). Nevertheless, such behavior may well affect his or her psyche adversely, and in the long term cause deep doubts and insecurities. The mere fact of acceptance of the framework does not necessarily exempt a person from eventual objective effects. Moreover, the person experiencing consequent disturbances may remain unable to identify their cause.

The same is true of certain beliefs and practices not thought by their proponents to cause psychological or social harm (e.g. homosexuality or masturbation). Psychological health and wellbeing is not merely an issue of adjustment to arbitrary personal or social standards. If this were the case, as some propose, standards could be varied at will and be as weird as we choose, and there would never be untoward consequences. But, to repeat, humans have a specific nature. No one is immune to reality check. Beliefs can be incorrect and values objectively destructive.

So much with regard to the virtue of 'dignity' – it is being worthy of self-respect and respect by others, through healthy-minded behavior. As for the virtue of 'decency' – it consists in treating other people and living beings with due respect (at least). These are related conditions. Self-respecting people generally behave respectfully towards others, acknowledging their dignity, thus revealing and reinforcing their own worth. (Respect does not of course mean condoning or honoring vice; it is rather a matter of poise: remaining noble even in the presence of ugliness, not stooping down to its level.) People without self-respect tend to exhibit disrespect towards others, thus revealing and reinforcing their own deficiency. Decency may range from a courteous hello or smile, to giving charity or saving a life; indecency may range from behavioral or verbal insult, to rape or torture.

11. Complications of Influence

1. Habits

An apparent issue relative to freedom of the will is the force of habits, good or bad. If we have freewill, how come we have habits that are sometimes so very hard to break? Some habits once acquired remain with us all our life, becoming (what Aristotle has called) 'second nature' to us. Bad habits, like (for instance) smoking tobacco, are often seemingly more easily acquired and difficult to shake off than good habits, like (for instance) keeping one's home clean and in order.

We can define as a ***habit*** any volitional type of behavior (response to stimulus), which *due to its repeated performance in the past* has become easier to do or more difficult to abstain from doing. The force of habit is, then (in our view), that of *influence* on volition, but this influence is special in that it is acquired and strengthened by repetition. The more often and thoughtlessly we allow ourselves to do something stupid (or not-do something intelligent), the more likely are we to do (or not-do) the same again. The more often and thoughtfully we encourage ourselves to do something intelligent (or not-do something stupid), the more likely are we to do (or not-do) the same again.

Habits appear to be due to the phenomenon of *reinforcement*. It seems to be a law of the psyche that *every volitional act increases the ease for a similar response in similar circumstances*. Thus, a prior volition influences a later volition, for good or bad. Underlying habit formation is a snowball effect.

Thus, Every time one takes up a challenge, it becomes easier to take it up again the next time it is presented; inversely, the more often one demurs, the less likely does taking up the challenge become. Every time one gives in to a temptation, it becomes easier to yield to it again the next time around; inversely, the more often one resists, the less likely is it to overwhelm us. Note that these two formulas are two sides of the same coin.

This law details more precisely how habits are formed: every strong act (taking up a challenge or resisting a temptation) produces an influence for the next opportunity, making it a bit easier; every weak act (failing to take up a challenge or giving in to a temptation) produces an counter-influence for the next opportunity, making it that much more difficult. The exact measure of influence is not specified here, but it is never infinite – i.e. it never makes freewill impossible thenceforth.

The process of habit forming or habituation consists in repeatedly responding in a certain way to a certain kind of stimulus. Thus, the habitual or customary is a quasi-automatic reaction or routine that we have more or less voluntarily instituted over time, for good or bad. We acquire a 'default' behavior pattern, which can only be broken by a willful de-programming or a corrective program. Thus, for instance, repeated laziness can only be overcome by repeated energetic behavior.

We should mention, incidentally, the role of repetition in *learning*. Not all learning is based on repetition; most depends on trial and error and other methods. But once a decision is made (by or for the learner) to memorize certain ready-made information or skills, this is often achieved by repetition. One may, for instances, memorize a prayer or some martial arts movements. This form of learning applies to animals as well as humans; for example, a lion cub may repeatedly imitate its parents' hunting techniques.

We may distinguish between a habit of *activity* and a habit of *passivity*. In the former case, some positive will is involved in the behavior pattern concerned; for example, saying 'good morning' to people one meets. In the latter case, the habit consists in not-willing something that might have been willed in a given circumstance, so much so that the stimulus may be ignored; for example, one may get used to a noise and cease trying to smother it or escape it, and even stop noticing it.

Habits we approve of do not normally constitute a problem, though we may conceive situations where we desire to at least conceal them. It is habits we evaluate as self-destructive in some way that we wish to avoid. The best way to avoid bad habits is to steer clear of temptations, while the forces involved are still at a manageable level.

Once habits are acquired, their influence may be so intense that punctual effort may not suffice to free ourselves of them; a certain course may then be called for, involving effort great enough over time to overcome the undesirable tendencies. The additional effort required may be just to remember that one has a habit to resist, or much more conscious planning, resolve and perseverance may be called for. A new, counter-habit may have to be instituted.

2. Obsessions and compulsions

If we advocate freewill, we have also to give a convincing account of the obsessions and compulsions that most people experience to some degree at some time in their lives. ***Obsession*** refers to any persistent or recurring thought or emotion, especially an unwanted one, which cannot be stopped at will. ***Compulsion*** refers to a seemingly irresistible impulse or urge to act in a certain way, especially an undesirable way[1].

> Common examples of obsession: a man may have the image of a woman he is infatuated with displayed in his mind for hours at a time; or a woman may for days mentally replay a painful conversation she had with her boss at work; or a man may spend his life trying to 'prove' himself to someone long since dead who made a wounding critical remark once that keeps echoing in his ears.
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> Common examples of compulsion: a student may periodically drop whatever he is doing and masturbate, although seeing the self-destructive effects of his impulses he keeps promising himself to take control; or a wife cannot stop herself chattering to her husband all the time, even while knowing he dislikes it and it drives him further and further away from her; or a manager cannot help it, but he just loves manipulating and torturing his employees.

Many psychological theories have been built around such apparently involuntary events in our inner and outer life. Some are optimistic, believing that humans can overcome their weaknesses and improve themselves. Others are pessimistic, considering people as mostly sorry puppets in a show they did not write but only at best watch. It is significant that the former theories tend to encourage us to rise to the challenge, whereas the latter tend to promote our resignation. The former facilitate virtue; the latter, vice. For this reason, the issues must be dealt with.

Even when one sits and meditates, one is often completely submerged by ongoing thoughts – significant or insignificant mental images, meaningful sounds (words) and meaningless ones (e.g. a musical tune) – and even sometimes by the perception of bodily sensations and emotions, which may cause voluntary motor responses (e.g. fidgeting, scratching or getting up). One may have recently had an exciting experience, positive or negative, which stirs one up, churning one's mind and body, in reminiscence or anticipation.

Now, one's self or soul may try and recover control of the situation, wishing to find peace of mind, serenity, equanimity. One tries and tries, without success. Sometimes, one is so caught up that one even forgets to try! One is drawn in, sucked into the maelstrom. Occasionally, one becomes momentarily conscious of the situation, and valiantly tries for a moment to apply some voluntary meditation technique like breath awareness or stopping thoughts, or even just making one's agitation itself the object of meditation. But one cannot sustain it; a moment later, one's attention is carried away by the strong currents of thought, like a leaf in a turbulent river.

Where is freewill in such cases, one may well wonder? Though the thoughts, emotions and movements involved are to some extent involuntary, in the sense of coming from the body, they are also surely to some degree produced by the self, with some measure of volition. Regarding the involuntary portion, we can compare the situation to that of a man tied to a chair and forced to hear an audio tape or see a video movie; even if this is against his will, he retains freewill but cannot exercise it. But, regarding the voluntary portion, *how can the self act against its own will*?

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[1] We may include ***inhibition*** under this term, as a special case of compulsion, where the tendency involved is *abstain from* the exercise of will, as it were 'against one's will' or contrary to one's better judgment. In this perspective, not-willing is a sort of will.

One might propose as an explanation of obsessions and compulsions that the soul is self-divisible, i.e. that it may split itself up into *conflicting parts*. What is voluntary to one fraction is involuntary to the other. One compartment may hide things from another. One part may make demands on the other, and be obeyed or ignored. And so forth. The splitting of soul would have to be regarded as an initially voluntary act or series of acts; these however could not be undone at will, but require a certain amount of voluntary inner work to reverse.

And I think that this proposition, that the soul may function at cross-purposes with itself, is largely assumed. It may sometimes be healthy. For instance, one's "moral conscience" may be considered as a reserved portion (of varying size!) of the soul, assigned by oneself with the permanent task of overseeing the remainder of one's soul, judging its actions and shouting foul when they deviate from certain norms. Often, it is pathological. Some people seem to have deep chasms in their inner personality, which may last a lifetime and severely damage all their behavior.

> This notion of compartmentalization could explain why meditators call the achievement of inner peace 'Samadhi', which I gather means 'integration' in Sanskrit, i.e. (in the present interpretation) unification of the soul. But, while I readily concede that the idea of soul division may be a useful metaphor, I would not grant it as literal truth that easily. We must first try to explain the data at hand in less assuming ways.

To understand the aetiology of obsessions and compulsions, in a manner consistent with freewill and without making any too radical additional assumptions, we have to examine such processes in more detail.

With regard to obsession, our above theory of freewill does not exclude that the brain may bombard the subject (cognizing soul) with manifold impressions. We have not suggested that all information used in volition has to be called forth voluntarily, but have at the outset recognized the mental domain as an intermediary between the physical and spiritual domains, such that the nervous system may provide the subject with uncalled-for data to consider (which may be relevant or irrelevant to will – it is up to the subject to judge). That the soul does not always have the power *to stop* such involuntary input at will does not therefore put freewill in doubt.

The uncontrollable arrival of data for cognition is not per se the problem of obsession, since volition is not involved in it. What *is* obsessive, and needs explanation, is when the soul *to some extent voluntarily* invites or sustains thoughts or consequent emotions, *even while wishing to stop doing it or pretending not to be doing it willingly*. In such cases, volition is in fact involved in the apparition of cognitive data. In such cases, the problem of obsession is really a problem of compulsion. For this reason, we are justified in lumping both problems together as here, and treating them as one. The underlying cause of the one is the same as that of the other.

Let us therefore turn our attention to compulsive behavior: what is its nature, cause and cure? Consider for simplicity's sake some examples from my own meditations:

- One day, I notice I am very talkative, constantly commenting on everything around me, and verbally directing almost everything I do. Why such verbosity? In my case, it is perhaps due to being a writer of philosophy, who has to express things in words. This turns into a habit hard to shake off. Linguistic rehearsal is also involved, preparing phrases for writing. Or again, perhaps I am unconsciously trying to communicate with someone by telepathy.
- Another day, I notice I am planning a great deal. Not just planning ahead for something *about to* happen, which needs immediate choices and decisions; but planning *further ahead*, for things that will happen a few hours, days, weeks, months or years from now, as if I will be unable to make the appropriate choices and decisions at that time (although I will in fact have more precise data at hand then). And worse still, not just planning for what is *programmed to* happen (for example, I must contractually leave my apartment in a few months); but even planning for what *might possibly* happen, even if improbably (for example, what I would do if I was on an airplane hijacked by terrorists, as in the TV movie I just saw). Why such orgy of planning, beyond all rational utility?
- On yet another day, I am fully absorbed by thoughts of petty conflicts I currently experience with people. This person said something that vexed me; the memory keeps returning and I consider the event from all possible angles: I wonder how I should respond, or debate if I should respond; I perhaps consider different scenarios, with responses and counter-responses. By association of ideas, I then move on to some other person, who I remember behaved in a similar fashion. I wonder what motivates such people, why they so lack ordinary decency or civility, where their moral or social education failed. Thus, my mind remains focused for long periods on events irrelevant to my present attempt to meditate – why?

Thankfully, my meditations are not always that troubled and confused[2]; and when they are, my mind does eventually calm down. Also, compulsions are not always undesirable; for example, the compulsion to solve an intellectual problem is valuable at the right time and place. But the issue here is: what is the common character of such busyness, why is one unable to simply turn it off, how is compulsion of this sort compatible with claims to freedom of the will? The answer it seems to me is with reference to: ***wanting*** (here using the term in a specialized sense) – which implies lacking something, a negative condition, whether one positively wants something or instead wants to avoid or evade something.

I may want to remind myself to say or do something; so, I keep repeating it mentally until I can act it out physically. I may have missed an opportunity, which does not present itself again (soon enough, if ever). I may know I will never in fact (at least, not so long as I am sitting in meditation!) get the chance to respond to some past event; so I am condemned to react to it in imagination, again and again. I may be tortured by an unanswered question, or some forgotten item of memory; so, I keep searching for an answer.

In all such cases, there is a 'hole' needing to be 'filled', an issue to resolve, a problem to solve, a task to be performed, some unfinished business to attend to. The situation is so constructed as to keep one 'suspended', almost powerless to untie oneself in the present context. Thus, what drives volition in such cases, is not a positive force, but rather something negative, a lack – a want.

If we now turn our attention to compulsive behavior on a more physical plane, we can discern a similar pattern. Volition is here too driven indirectly by negatives, rather than directly by positives. It is sucked in, rather than driven. That is what makes compulsions particularly insidious: they are not due to the presence of some temptation or obstacle, but to the absence of something. In ordinary desire or aversion, the object is relatively manifest and identifiable; in the 'wanting' involved in obsession or compulsion, the object is more concealed or deeply buried. Being absent, that thing is necessarily difficult to spot and be dealt with. There is a black hole, perceivable only by its effects. Thus, to overcome a compulsion, it is imperative we uncover the hidden term in the equation.

Consider, for instance, ***drug addiction***. A voluntary act is always involved, such as reaching out for a glass of liquor, or lighting a cigarette or joint, or using a needle, for instances[3]. Such an act is usually preceded by a mental rehearsing of the act: one imagines oneself doing the act and enjoying its sequels. Perhaps a foretaste of things to come is feasible, like getting a whiff of smoke. One first mentally toys with the idea – then physically executes it.

The drug addict thinks or claims the drug will provide relief from physical, mental or 'existential' suffering. The drug is not intended or expected to cure anything, but only as 'compensation'. The alleged suffering may take the form of insufficiency of pleasure or excessive pain. The relief the drug offers takes the form of an escape from suffering; the drug does not abolish the suffering, but only momentarily conceals it. For this reason, the drug is bound to be objectively harmful in some way over time; for if the suffering used as a pretext is objective, it remains untreated. The drug may additionally introduce its own physical, psychological or social damage in the equation; the addict may develop health, emotional and/or social difficulties. Because of its ineffectiveness or counter-effectiveness[4], the drug's use tends to excess. After some time, the drug's effects thus come to 'justify' its use: a vicious circle is created.

The compulsion to resort to the drug is thus more than a mere habit based on repetition. There is an initial argumentum, which gives the addict a pretext; this may be false and misleading. The addict considers himself or herself as being disadvantaged in some way (emotionally, socially, whatever), and proposes to make up for such deficiency by means of the drug. Real problems, existing before the drug-addiction, are ignored; and real

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[2] Simple *tiredness* often plays a role in such effects; and that is significant, because it shows that they remain basically issues of influence rather than credible objections to freewill.

[3] The psychological processes involved apply equally well to more metaphoric 'drugs', of course. The 'drug' may be food or sex, for instances. In such neurotic situations, of course, eating has little to do with bodily hunger, and sexual intercourse is no more than using someone as an aid to masturbation or at best mutual masturbation. The 'drug' may also be more masochistic, something negative rather than positive. In a way, all use of drugs may be considered masochistic, since it is self-destructive behavior.

[4] For example, cigarette smoking makes one more, not less, nervous.

problems, due to the drug or the addiction, are produced; the latter also remaining unsolved. To free himself or herself from the addiction, the addict cannot merely make an effort of will at the time of the compulsive urge, but must first intellectually unravel the convolutions involved and then stay aware of them. Then only can willpower ("just say no!") do its blessed work over time.

The existence of compulsive behavior need not therefore be considered as putting freewill in doubt. Volition is indeed influenced, here as in all cases; but that which is really doing the influencing is relatively concealed. For this reason, it is particularly difficult for simple volition to overcome compulsive influences; often, mere strength of will does not do the job: what is needed is awareness and cunning.

The agent must first realize and admit he is entangled in some knot, then make the effort to unravel it. This means identifying the unresolved issue, the quandary, the missing link, behind the compulsion; and neutralizing it, somehow. Mere revelation may well suffice in some instances – just seeing the absurdity or circularity of the compulsion dissolves it. In most cases, some priority must be set: i.e. *some illusory or lesser value must be abandoned in favor of some real or greater value*. If the dog lets go the bone, it can pick up the steak. Often, more long-term work on oneself is required, which may include theoretical studies, detailed observation, analysis and modification of one's patterns of thinking and doing, and (in my view, most important and effective) meditation.

> Another example we can give, that is relevant to current social mores, is the psychology of *sexual hedonism*; this is very similar to drug addiction.
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> The facts of human nature, which everyone can verify by extrapolation from their own experience (though saying this is not an invitation to 'experiment' with such matters), are the following. Given free rein, the senses ultimately make no distinction regarding age, gender or species or any other issue of causation; all they care about is getting more pleasure and less pain. The senses devoid of rational guidance are only concerned with quality and intensity of sensations, without regard as to their sources or their consequences.
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> People who imagine that happiness is to be found in sensual experience pursue the latter relentlessly. After a while, they become more and more blasé to such experiences, and start looking for new experiences. The sensitivity of their sense organs having been diminished by repetition and excessive friction, they desperately yearn for novelty that arouses other sensory receptors or the same receptors in other ways. They thus sink deeper and deeper into more and more depraved sexuality, in a sort of mad desperation.
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> The result is not happiness, but self-contempt and self-defeat (not to mention damage caused to others, used as tools or accidentally affected).

Desire is not proof of need; people can and do desire things that cause them (and others) much harm. People often use their reason to find pretexts for their sensuality, to rationalize it – but in such case, reason is subservient to emotion. To be free of sensuality, one must admit the independence and supremacy of reason over it.

Note also, concerning sexual orientation: in general, spiritually pure people find impurity repulsive, whereas the impure feel at home in the midst of it. The impure find the pure attractive, but only as an opportunity to spread impurity, only in order to soil the pure. The impure are most attracted by the equally impure, to express their impurity; or by the more impure, to increase in impurity. As impurity spreads in a society, tolerance for it proportionately increases; by and by, impurity becomes more demanding and aggressive.

3. The ego abhors a vacuum

It is interesting, finally, to compare our above conclusion concerning 'wanting' as the driver of obsessions and compulsions, and the Buddhist principle that 'desire' is at the root of all human action (creating karma and thence further 'desire', in a seemingly endless cycle). We have earlier seen that volition usually has some goal (perhaps always so, if we discount apparent whims, granting them to have ends of sorts). In the present context, we have noted that sometimes the purpose involved in volition is particularly perverse because misleadingly eclipsed.

A very perspicacious observation of Buddhist psychology[5], which explains a lot in the present context, is that *the ego is constantly seeking stimulating experiences so as to reassert its existence and identity*. This is the basic 'selfishness' or 'egoism', and 'vanity' or 'egotism', of the ego or false self. By the 'ego'[6], we may understand the (partly or even largely erroneous) self-image of the soul[7]. It is a mental projection, a set of notions and suppositions about itself, which the soul confuses with itself[8]. The self-as-ego always needs buttressing one way or another. We may put it as: 'the ego abhors a vacuum'.

As I have explained in my *Phenomenology*, the 'ego' consists of aspects of one's body, mind and soul – some correctly experienced or inferred, some wrongly assumed, some fancifully projected – to which one (i.e. one's soul – the cognizing, willing, evaluating self) attaches to as one's very 'self'. It is a partly true, partly false self-image, weaved selectively and with fictional embellishments[9], to which one clings tenaciously in the belief that its loss or damage would be unbearable.

Being a cognitive construct of the soul (and not itself a soul), the ego has *no will of its own* (even though we sometimes speak of it as if it did). It is not a separate entity competing with the self – although we often present it as such, because that is a convenient image, a useful figure of speech. Every supposed voluntary action of the 'ego' is an act of the soul or self, for which the latter remains fully responsible. Nevertheless, the ego-construct strongly *influences* most thoughts and deeds of the soul, sometimes for the good, often for the bad, acting like a veil to knowledge and an obstacle to volition, in the way of a filter.

Bodily sensations and sentiments are major constituents of the ego, which have a particularly powerful influence on identity and behavior, due to their enormous and insistent presence. But many other factors come into play, too, such as ongoing mental chatter.

A common affliction today (in men as well as women) is repeated gazing at one's image in the mirror. This is not just amusing narcissism, but an expression of the ego's deep insecurity and need for confirmation of existence and identity, as well as a preparation for social projection. A similar affliction is looking at photos or films of oneself, and showing them to other people.

Our ego is also 'relative' to other people, in that we project some of it (usually the more flattering aspects, though often also aspects that may excite pity and charity) to them as our social persona (partly as cunning construct and partly incidentally or accidentally). To the extent that one manages to convince others of the personality projected

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[5] The following account is inspired by Buddhist doctrine, but I have adapted its terms. Thus, most schools of Buddhism deny existence of a "real (individual) self" (here called soul), admitting only an illusory "conventional self" (here called ego) and a substratum for all existence called "Buddha nature" or "original ground" (what we might call a universal soul). In my view, granting the existence of such an undifferentiated substratum, we would be hard put to understand how or why it would give rise to egos (false selves), if we did not assume that the universal whole is first in the interim apparently broken into individual fractions (real selves). Although Buddhist theorists enjoy provocative paradoxes, we must remain critical and logical.

[6] Note that our use of the term 'ego' here derives from its popular use, and is not to be confused with that in the psychology of Freud (which refers to a 'realistic, practical' segment of the psyche), though it may encompass aspects of the latter concept, as well as of the contrasting concepts of 'id' (an 'emotive, impulsive' segment) and 'superego' (an 'idealistic, regulatory' segment).

[7] It is interesting to notice how we converse with ourselves, sometimes in the first person singular (I, my), sometimes in the second (you, your), and more rarely in the third person (saying 'one' or 'we', as here). One may also wordlessly project a physical image of oneself doing or having something. All such discourse may, together with other events, be added to the basket that constitutes the 'ego'.

[8] For this reason, the ego may be referred to as the prison of the soul, or more poetically (to use a metaphor dear to Jews) as its place of exile. The ego usually involves an inflated vision of our importance in the scheme of things, due to the maximum proximity of our body and mind in our perspective on the world; but the ego is also in fact an artificial limitation on the natural grandeur of our soul.

[9] This means, for instances, treating momentary appearances as established realities, or transient or occasional traits as lifelong characteristics.

– through one's words and deeds, as well as physical appearance – one reinforces one's own conviction in the said self-image.[10]

Although ego building is possible in isolation from other people, it is (for good or bad) made easier in many respects in social contexts. The reason is that other people only know the individual through some phenomenal factors, whereas the individual also has intuitive (non-phenomenal) knowledge of self. With other people, we can selectively 'show and tell'; also, they linger on the past, instead of letting it stay in the past, since the image of us they memorize is accumulative and rather rigid.

The ego is essentially *restless and insecure*. It prefers pleasant experiences; but if such are unavailable, it will just as well seek painful ones rather than none at all. Fearing to face its own vacuity, it will seek sensations, thoughts, distractions and possibilities of self-identification (e.g. listen to heavy metal music on the radio or watch a scary movie on TV, or just go to sleep and dream, or play games with someone). It will invent artificial intellectual problems, so as to have something to think about and express itself through. It will create psychological, existential or social problems for itself, so as to have something to respond to and a role to play. That is, our problems are often not accidental, or even incidental, to our pursuits, but their very purpose.

In particular, the ego's need for stimuli helps explain why man is such a social animal. Of course, humans do objectively need each other: for common survival, for procreation, to bring up children. People care for each other, support and help each other, work together for the common good, enrich each other culturally. But modern novelists, journalists and psychologists have come to promote a great emotional dependence in people (which paradoxically breaks down human relations in the long run, because it is misguiding). To correct this erroneous tendency, by showing up the subjectivity of many social bonds, is not 'cynicism', but lucidity and compassion.

Most people quickly feel lonely if they are alone. Although the said hunger for stimulation can be satisfied without resort to company (especially as one matures), the easiest way to satisfy it is through human exchanges. The advantage here is precisely the maximum give and take involved. One gets sensory input, and one has respondents in front of whom to project a social persona. One acts, one gets feedback, one reacts – one is almost never 'bored'. With a companion – a family member, a friend, a lover, a colleague, even an enemy if need be – one is always kept busy and entertained. One prefers a nice, loving relationship; but one might settle for an argument or a fight, or just a walk in a crowded shopping center. If a human companion is unavailable, a pet will do.[11]

The motivation behind our constant grasping and clinging after objects of desire may be nothing more than a frantic, desperate attempt by the non-existent ego (i.e. to be precise, the self confusing itself with this imagined entity) *to assert itself* through stimulants and 'ego games'. This would be (according to the said thesis) the mother of all compulsions, whether bad or good. Therefore, if we managed to abandon our delusive self-identification with this illusory self, we would be freed of all compulsions.

A further explanation given by Buddhism is that "existence is suffering". The ego necessarily gives rise to suffering – being finite, it is inevitably subject to repeated vexation, frustration, pain, fear, anger, hatred, despair, boredom, and so forth, whether due to the presence of objects of aversion or to the absence of objects of desire. This suffering is expressed emotionally, as a sort of background noise of negative feeling, underlying to some extent all one's experiences, even those that superficially appear positive. This negative substratum, of which we are sometimes acutely conscious and sometimes only vaguely aware, strongly *influences* our behavior, causing us to think and act non-stop, often in deviant ways (such as drug taking), in a blind and hopeless attempt to rid ourselves of the inexplicable unpleasant feeling.[12]

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[10] The relativity of ego is also, by the way, an insight drawn from Buddhist psychology. Truly, the East is a rich mine of human understanding.

[11] Of course, some people are loners against their will, because they cannot handle the challenges of relations. Hermits, on the contrary, avoid human or other contacts, so as to reduce unnecessary stimulation, and the artificial problems that come with it. They wish to simplify their life and experience to facilitate meditation. But some people manage to meditate in the midst of disturbances.

[12] This is the first of the "Four Noble Truths" at the core of Buddhism. Note that one does not experience the emotion the French call "*le mal d'être*" all the time; one may be very happy for a long time, unaware of this substratum. But this

The Buddhist principle of desire is thus very general[13]: it refers to a sort of gluing[14] of the self to all objects of cognition and volition, called attachment or variously desire, grasping, clinging. However, such attachment is not easily shaken off. The opposite acts – viz. detachment, indifference, renunciation, letting go – are equally forms of attachment, insofar as they are intentional acts. Escape from or avoidance of attachment is impossible, if it is itself a pursuit of sorts. The whole difficulty of 'liberation' is that the latter circle must somehow be squared. Thus, Buddhism teaches more radically that there is compulsiveness of sorts in all our actions, which can only be eliminated in the ultimate 'enlightenment'.

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happiness is inevitably temporary, i.e. it is dependent on causes and conditions like good health, a loving spouse, material plenty, etc. It is brittle, fragile; and at some level, we all know it and brace ourselves for the inevitable end.

[13] This is worth comparing to the concept of an "evil impulse or inclination" (*yetser haraa*), proposed in Judaism. According to the Rabbis, all men and women, naturally, by the mere fact of being physically constituted, have such an inherent negative tendency. This is not, however, all bad. When people work against such resistance (the matter weighing them down, as it were) to achieve good, they acquire credit. But moreover, it is sometimes a good thing when they fail to overcome it. For example, yielding occasionally to sexual desire makes reproduction possible; if everyone was too saintly, there would be no one left.

[14] See my essay *Ungluing the mind*, further on (chapter 16.1).

12. Urges and Impulses

1. Physical urges and impulses

We all have *natural bodily **urges***, which seemingly 'force' us to perform certain actions. But on closer analysis, they do not really leave us no choice at all, but present us with relatively little choice.

Our most manifest bodily urges relate to the **digestive** system. They are the urges to drink, to eat, to urinate and to defecate. Observing their course in detail, the following features are apparent in common to them all (at least in humans):

1. We experience a set of physical *sensations*[1], which *triggers* the whole process. This may be called the *stimulus*. Thirst includes sensations of dry taste inside the mouth and throat. In hunger, the signal consists of distinctive pangs in the stomach (often with felt movements and audible sounds of the gastric juices). In urination, we have a recognizable feeling of liquid pressure in our sex organ. In defecation, feelings of bowel movement and overload inside the rectum are experienced. This sensation is normally a natural outcome of an objective state of affairs in the body: deficiency or excess of liquid or solid nourishment. However, it may also on occasion be aroused artificially, by mental images; for example, wondering whether one needs a pee before going to bed, one may begin to urgently feel like having one.
2. We may moreover discern, more subtly, a sensation of sorts, occurring somewhere in our motor system, consisting of *an impulse to act in a certain way*. This secondary physical sensation is probably not a reflex, but an unconscious first reaction of the central nervous system. It signals that the appropriate (or usually requisite) organs of action are prepared to act in response to the stimulus. The muscles of our legs and arms are poised to grab drink or food, and our mouth is already salivating; or we are ready to run to the toilet. The impulse is thus a velleity to act (a natural reaction or one based on past behavior). However, in our present perspective, it serves as information rather than as action. It is perhaps what we may most closely identify with the 'sense of having an impulse'.[2]
3. When these sensations of stimulus and impulse come to our attention, they are *evaluated* by us in various respects:
    a. We assess a *discomfort* that needs to be gotten rid of. The more intense the discomfort felt, the stronger the urge.
    b. The degree of *urgency* involved is estimated, i.e. how quickly we must respond as urged to. The essence of 'urging' seems to be the *time limitation* it imposes on us; we are, as it were, under pressure of time. The stronger the urge, the less time it leaves us.
    c. We consider *expedients*, what might be done or not-done to deal with the matter at hand. Such evaluation depends not only on physiological considerations, but also on practical, psychological and social factors.

    The practical issue might e.g. be: how easily or soon can we find nourishment, and what/where is it? Or how close is the nearest toilet? The psychological issue might, for instances, be: are we on a diet or a fast for some

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[1] Sensations are of course impossible to describe in words, being primary phenomena. All we can do is allude to them through familiar expressions and analogies. Furthermore, my descriptions here are probably incomplete: thirst and hunger may include oral sensations I cannot pinpoint. Also, in some cases, sensations vary in detail: for example, more liquid feces give a different sensation than more solid ones. Sensations are also registered as distinctive: e.g. hunger differs from pain due to indigestion or intestinal grippe; or the sensations relating to urination differ from those in sexual desire.

[2] I extrapolate this assumption from a common experience in my meditations: as I approach the last few minutes of my regular period of meditation, I often feel a strong impulse to get up. Such "okay, time's up!" signal is worth resisting, by refusing to identify oneself with it, so as to get the full benefit of the sitting.

reason? Or: are the toilets here too smelly or dirty? The social issue might be: can we do it in public, is it ridiculous, approved, allowed or forbidden?

4. Such various considerations in making a value judgment involve mental images – invoking memories, projecting possibilities, anticipating consequences. Finally, choices are sorted out and a decision is made by us. Our will is stirred into action, actualizing our present response.
    a. This may consist in *retarding* execution, by *resisting* our impulses – willfully not seeking nourishment or not going to the toilet.
    b. Or it may consist in *responding*, at the earliest or last possible opportunity, to obtain appropriate *relief* from the sensations, in a more or less convenient time, place and manner.
    c. Or we may hesitate or abdicate, letting nature eventually determine the course of events: progressively weakening us till we die of thirst or starve to death prematurely, or incontinently releasing our urine or feces in what may be the wrong time and place and eventually damaging some organ.

   In the case of imminent danger to life, limb or health, we are *instinctively extremely unlikely* to do nothing about it: this improbability being what we commonly call '**the will to live**'.
5. These different possibilities of response are, note well, all *volitional*. Whether we retard, preempt or abandon things to nature, we have made a choice, though one involving different effort inputs. Whatever it is, this is *our* response. However, any of these choices, and the above mentioned thought process leading to it, may be made *with varying degrees of consciousness*. It may be effectively 'involuntary' (i.e. involve a very minimum of consciousness) or more and more voluntary. Also note, the relevant events that preceded our volition, i.e. both (a) the cognitions of sensations and (b) the value judgments and the other considerations that went into them, are all *influences* on our will.
6. An essential feature of these natural processes is that they are *inertial*, i.e. inevitable if not interfered with. If we do not respond appropriately to the signals our body sends us (thirst or hunger, or the urges to urinate or defecate), certain negative events eventually occur against our will: we may get sick and die, or soil ourselves. First, however, we may experience a *mounting pressure* of stimuli and impulses[3]. We may be able to prevent the natural event by application of will for quite a while. Then at some time, that choice is no longer given us, and we have to either promptly respond by an act of will that relieves the pressure, or face the inevitable natural event (whether weakness and death, or incontinence and sickness).
7. It is the latter *prospect* of some untoward events that influences us to take preventive measures, at the first, or (at least) at the last, opportunity. That is, some *mental* images are the immediate cause of our eventual action, rather than the pure sensations that initially start the whole urge process. The closer the event feared gets, the more our mind is occupied by it, calling for relief. Although very physiologically centered, the essential theatre of such urge complexes is mental, and the action they result in is volitional. Moreover, note well, the categories of causality of causation, influence and volition are all involved.
8. Furthermore, note, whether we obtain relief volitionally or against our will, sooner or later the same process starts all over again. We get thirsty, hungry; we drink, eat; we digest and feel the urge to dispose of the waste; we go to the toilet; pretty soon, we get thirsty and hungry again, and so forth. At least these digestive tract processes are cyclical (more or less daily), and go on throughout our lives to provide our body with energy and matter.

One further remark: it should be noted that the initial physical sensation is in some cases aroused by a prior thought (which in turn may have been brought about by some other sensation, and so on). For example: if before going to bed I ask myself whether I need to urinate, my attention goes down to my organ and this usually suffices to initiate a sensation of need that would probably have not been present or intense enough otherwise. Or again, I may feel no thirst till I see an advertisement for a drink. We shall return to this issue further on, when we consider mental urges.

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[3] In truth, in the case of thirst and hunger, the feelings may abate after a while. This is evident when I fast for a day; I do not know what happens beyond that. In such cases, the initial signals from the body are only a temporary warning, whose memory must suffice to influence us to appropriate action.

Another powerful physical urge is the **respiratory** urge. Breathing (muscles pumping air rhythmically in and out of our lungs) is most of the time automatic. Occasionally, it becomes a more or less voluntary act. If air is lacking in the surrounds or our throat is blocked, one becomes aware of the difficulty of breathing and to some extent volitionally intensifies it. If stalked or stalking, one may find one's breathing more marked and noisy, and perhaps try to control it so as to remain unheard by the enemy feared. In meditation, when one turns one's attention to one's breath, one's initial tendency is to take over the function, as if obliged to breathe consciously; although after a while it is possible to observe the breath without affecting it. Also, it seems[4], one cannot willfully *stop* oneself breathing indefinitely: if one persists, one loses consciousness and the breathing mechanism takes over again.

The **sex** drive has two facets. Its basic function is *reproductive*. This is a milder, long-term urge, part of the general will to live, a will to survive in one's descendants (as an individual[5], or a member of a certain family or race or species), perpetuating one's genetic makeup. Here, the 'discomfort' to be removed may be the metaphysical fear of nonexistence, or the more conscious desire to obey an assumed Divine commandment. The time frame to fulfill that purpose is anytime after puberty and before natural loss of sexual potency or fertility, accidental organ damage or death – which is mostly understood to mean as soon as possible or convenient.

The sex drive also has a *hedonistic* component, which serves to promote the biologically primary reproductive function. This is a short-term urge, which can become very intense, not to say overwhelming. Here, the 'discomfort' to be removed is partly the pain of sexual tension, partly the hope of sexual pleasure. Sensations of physical lust arise in and around one's sex organ at the sight of a potential sex partner, and the urge and excitement become more intense as the relation approaches consummation. The potential of reproduction is momentarily largely eclipsed by the immediate urge to engage in actual intercourse. One may control one's timing (or even at the last minute for some reason disengage). Finally, one lets go and obtains relief in orgasm and ejaculation, until the next time around.

Among humans, the sex urge is strongest in adolescence and youth, and perhaps (apparently because of testosterone levels) more so in males than in females; these facts have biological utility. Of course, some older people and females seem considerably influenced by lustful feelings, but this may rather be a sign of emotional immaturity and gullibility towards media hype[6], than natural necessity.

People can, by willpower, altogether abstain from sex for years or even all their life[7]; this occurs under the influence of some common belief (e.g. Christian or Buddhist spiritual practice) or some personal peculiarity (e.g. a childhood trauma). A man may nevertheless have wet dreams. Some people temporarily or permanently ignore the reproductive aspect of sex, but are committed to its hedonistic aspect. Today, people may thanks to contraceptive pills and condoms engage in normal sexual intercourse without risk of conception, as promiscuously as they like. Some people satisfy their lust by masturbation. Some people go so far as to engage in child abuse, homosexual acts or even bestiality.[8]

A third aspect of the sex drive worth noting is more conventional than physical, being due to *social* pressure. This occurs in traditional society, based on the family; but also in modern society, which glorifies the appearance of sexual prowess. If one fails to fulfill social expectations, one may considerably lose face or be variously stigmatized. Such penalties are real enough, as one's life-opportunities in society may be affected; so people generally comply. Exceptions may be granted, for instance to monks and nuns; indeed, in their case, the public regards any sexual interest as scandalous.

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4 See Curtis and Barnes. p. 408.

5 Here, I refer to the Jewish belief that one's children are continuations, extensions in time and space, of oneself. But we may also refer to the Buddhist teaching that sexual desire is the motor of cyclic existence, because through that desire one engages in all sorts of pursuits that increase karma and thus generate one's rebirth.

6 The claim that sex, in whatever guise or form, is a necessity for mental hygiene and physical wellbeing has become widely accepted in our culture as fact. But, judging by its observable negative effects on personality and society, this claim should in my opinion be reviewed.

7 Even animals do not all satisfy their sex urge (at least I assume so, observing that in many groups a dominant male monopolizes all the females).

8 Needless to say, by listing such proclivities I do not mean to condone them.

Any **feeling of sickness** urges us to identify the cause and find a cure, or at least to relieve the symptoms, or risk some untoward consequence(s). If we feel tired, our urge is to rest or sleep, till our energy returns, or risk collapse (e.g. at the wheel of our car). If we feel hot or cold, we have an urge to adjust the temperature of our body (e.g. by taking clothes off or opening a window, or putting a blanket on or turning the heater up); else, we start sweating or shaking, and lose energy, etc. If our skin surface is itching, we have the urge to scratch it, as if to remove the irritant; in some cases, the irritant (e.g. a biting insect) is in fact thus neutralized. In each such situation, our tendency is to avoid discomfort and eventual illness, and return to comfort and ensure health.

We may of course systematically preempt problems, rather than wait for them to arise and solve them – for example, by earning a living, and thus making sure in advance that one has enough money for basic needs such as nourishment, shelter, procreation or medical insurance. Clearly, such functioning goes beyond immediate physical urges, preparing longer-term responses to them. This is all an expression of the will to live. Some people care too little for the future, some too much.

So much for our analysis of the common bodily urges. Of course, much more can be said about such processes from a biological or medical point of view – for examples: digestive and respiratory urges relate to metabolism, temperature control relates to homeostasis, and so forth. While such knowledge is truly fascinating, and worth acquiring to obtain a fuller understanding, our approach here is simply phenomenological – how the individual directly experiences things and responds to them. In particular, we have tried to clarify in some detail the involvement of volition and influence in them.

The processes above described, despite some differences of detail, have largely similar features, so that we can propose a general definition of the concept of urge, at least with regard to humans (we may have to make adjustments with regard to animals). Our interesting finding is *the extent to which what we call a bodily urge involves 'mental' components* (presumably, these diminish 'lower' down the scale of animal life[9]). We are less driven by a physical force than by the *prospect* of some negative eventuality and the *thought* that the temporal window of opportunity to prevent it may close.

Moreover, although such urges relate to physical processes with eventual automatic outcomes, *they allow for volitional interference, in the way of temporary resistance and some convenient preemptive measure*.

The preemption may be positive or negative. In the case of urination and defecation, the event (call it X) that is minimally bound to occur if we do not interfere is incontinence, and its preemption consists in going to the toilet before that happens (i.e. it is also X). Likewise in breathing: the automatic and volitional acts have the same effect (bringing oxygen into lungs). In the case of thirst or hunger, the minimal event (X) is insufficient energy or matter, and its preemption consists in providing energy or matter soon enough (i.e. it is notX, the opposite). Likewise in reproductive sex: the danger faced is generational discontinuity, while the remedy is to procreate.

We might at this stage usefully distinguish between initial sensations emerging from *natural bodily* processes, like the digestive, respiratory and reproductive ones above described, and those due to some *external physical* stimulus. For instances: if a bright light flashes into our eyes, we blink, fearing damage to our retina; if someone is tortured, he may scream or cry, hoping to arouse pity in his torturer. It is useless to attempt an exhaustive list. Suffices to note that any sense organ(s) may be involved in the stimulus, and there are standard responses (though sometimes, creative responses may be called for).

A more radical distinction suggested by our above analysis is one between urges and mere ***impulses***. Impulses, like urges, tend us on a certain course of action, and they can be resisted or indulged. However, whereas impulses can be resisted indefinitely without risking some untoward natural consequence, as we have seen this is not true of urges. Examples of impulses will serve to illustrate this differentia. If we hear some unpleasant noise, we rush over to stop it if we can. If we are tickled, our tendency is to wiggle as if to escape our tormentor. In such cases, note, our volitional response (resistance or preemption) has no very significant effect on our health or life[10].

We may use the word drive to mean 'urges or mere impulses'. Often the distinction between urges and impulses is moot. Often, what appears as an urge can be construed as a mere impulse – for example, many of the above

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[9] However, there must be some mental component. Consider, for instance, why a housebroken dog holds back from doing its thing indoors – it must have some memory of its master's disapproval of soiling the home.

[10] Though it could be argued that even an unpleasant noise or sensation is somewhat threatening.

described hedonistic aspects of the sex drive. We may also classify habits or compulsions like smoking tobacco, the use of hard drugs or alcoholism as impulses. The failure to soon procure the desired drug may produce withdrawal symptoms (irritability, insecurity), making it seem like the impulse is an urge. Thus it seems to the victim's befogged mind; but, biologically, the opposite is true – the drug is destructive. So in fact, if there is any urge, it is a natural urge to stop smoking or getting doped-up or drinking, or risk disease.

2. Mental urges and impulses

Mental impulses and urges have logical constructions similar to physical ones, except that usually the initial stimulus is a thought (or discontent) rather than a sensation (or discomfort). For example, the above mentioned social convention aspect of the human sex drive is clearly a mental urge, rather than a physical one.

The dividing line between them is admittedly sometimes arbitrary. Often, a physical urge or impulse occurs following a thought. We have seen, for example, how the mere thought of urination may give rise to the sensation that triggers the urination urge; similarly, for instance, the mere thought of a cigarette may make the habitual smoker 'feel like' having one. Conversely, a mental urge or impulse may be kick-started by a prior sensation or perception. For examples, one heard someone say something or saw an ad on TV.

A good illustration of mental urge would be my urge to write this here book. It starts with a spontaneous, persistent thought. It is an urge, in that a time constraint is consciously involved – I constantly tell myself to finish the book before I die (and pray to be granted life enough). This distinguishes it from, for example, an impulse to buy a new car I saw tantalizingly advertised; although, having so hooked me, the salesman may try to induce in me an urge to buy it, by setting a deadline for a 'special offer' at reduced price or with extra features!

The production of mental impulses, and their upgrade to urges, are common practices of religious traditions; for example, a religion may teach that standard prayers or other rituals are necessary to salvation (impulse), and additionally institute set times for such rituals (urge). Similarly, the tax office sets a deadline for tax returns, and imposes a penalty if the task is not done on time. Such expedients are used by all secular ethical, social, legal or political systems, to promote duties and their timely exercise. In such cases, the terms 'to impel' or 'to urge' someone respectively mean '*to cause an* impulse or urge in' that person – the causality involved being that of influence.

A mental impulse or urge is triggered by some distinctive memory (perceptual or conceptual), or an imagination (visual or auditory), or an emotion (a mood or psychosomatic sentiment or purely physical sensation), or a verbal proposition. These initial 'thoughts' may arise spontaneously, or through some intellectual process, or by mere association of ideas; or they may be generated by bodily influences or by perceived external physical events or persons. Beyond that stimulus, everything is analogous[11]. Impulses differ from urges in lacking temporal pressure. The time factor involved in urges functions by creating psychological stress, which makes us double up our efforts so as to get rid of the annoyance as soon as possible[12].

It is interesting to compare *impatience* to mental urgency. They have some affinity, although they are logically opposite in the sense that urgency is due to (assumed) insufficiency of time, whereas impatience signals (assumed) excess of time. Impatience arises when one feels that some process (e.g. waiting for one's date) is taking more of our time than one is willing to devote to it. So one wishes to hurry it on, e.g. by being less careful or by inciting urgency in other people involved – and if it is out of one's power to do so, one suffers stress. The time one has mentally allotted to the task is artificially (by wishful thinking) shorter than the time it really takes. An impossible (and needlessly stressful) urge is therefore produced to fit a process of longer duration in a time restriction of one's own making.

A mental impulse or urge, like a physical one, involves a certain velleity to action, which may include specific muscular feelings; e.g. eagerness to play the piano may give rise to sensations in legs to go to the piano, and in

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11 As we shall see further on, some mental drives have other differences from physical ones.

12 Note that often two or more urgencies may be superimposed within a same time frame, increasing our stress tremendously, because we are forced to prioritize.

hands to play it. An evaluation occurs, which determines our degree of desire or aversion, the urgency if any of its fulfillment, and the available ways and means. Choices are made and decisions taken, culminating in volitional acts – whether temporarily resisting the impulse or urge, or doing what it impels or urges us to do at an appropriate time and place, or letting things happen as they may.

Note that what classifies an impulse or urge as 'mental' is its assumed starting point – the eventual action(s) it drives us to do may be physical as well as mental. Thus, for instances, lust is an impulse to grab and kiss the girl, anger is an impulse to punch the guy's face in – these are physical acts proceeding from a thought. Again, yearning for understanding is an impulse to study – the latter consisting mainly of mental acts.

Just as bodily urges are cyclical, their fulfillment bringing only momentary relief, soon after which they recur, so with many mental desires – they tend to be insatiable and unlimited. Thus, for instance, for most people, the more money they can get, the better; because even if they feel secure for today and tomorrow, there is always the day after and the one after that to worry about. Urges can thus become permanent prisons, if given free rein. The lover of wisdom would here suggest: If you *identify with* the urge, it dominates you; if you don't, you *can* dominate it.

The passive connotation of the word drive (driven) should not be overemphasized, however. We should rather keep in mind that 'drive' rhymes with 'strive'. One may actively drive oneself. Our mental urges and impulses are not just happenstance, or innate like most physical ones – they are generally acquired. They are furniture of our minds that we have often constructed and placed there[13] ourselves. Like the body, the mind is an instrument of the soul. An instrument is something that has some uses, though not infinite uses; something that can be useful, but also obstructive; something that has a nature, and is not infinitely pliable.

Thus, we may train ourselves – or be trained by others – to respond in certain ways to certain situations. This may occur consciously, in the way of 'working on oneself' – or it may be the natural effect of a long series of separate choices and acts, which together eventually constitute a habitual pattern of conduct. We may be fully aware of a drive, whether we approve or disapprove of it; or we may be subject to it while largely unaware of it as such, whether due to overall poverty of self-knowledge or because we have suppressed the specific knowledge to make room for some personal contradiction.

Indeed, we may be subject to conflicting drives, be they physical and/or mental. For example, one may have to risk one's life to save a loved one. Impulses or urges are in conflict when it is naturally impossible to follow/fulfill them both. Urges are, moreover, in conflict, when the time required for their performance and their time limits makes it impossible for us to satisfy them both. In such cases, we have to become aware of the potential conflict, or else fail in both cases; and then we have to prefer one to the other, and in urgent cases make our mind up quickly enough to avoid actual clash. Sometimes the dilemma is paralyzing; in which case, nature follows its course.

When a person deals with such conflicts in a systematically irrational manner, making little effort to bring them out into the open and resolve them one way or the other, keeping them in the dark through fear of admitting unflattering traits or wishing to indulge in drives he or she knows to be unsuitable and harmful, the person is eventually subject to mental pathologies. Such *repressive* behavior over time may, for instances, give rise to chronic negative emotional states like anxiety, or to occasional 'inexplicable' outbursts of hatred and anger, or to excessive sleep and permanent fatigue, or to nervousness and hyperactivity, and so forth.

In all such cases, one can glimpse underlying conflicts that have to be faced, and resolved through appropriate thoughts and deeds. Mental drives are not permanent features once acquired. They can, more or less consciously, be attenuated and eventually eliminated, by making suitable choices over time – for instance, training oneself to respond differently to the same stimuli till such new response becomes 'second nature'. Such changes usually require sensitivity, cunning, effort and time – they rarely just happen or can be produced by immediate will.

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[13] This is said in a common manner of speaking. Drives are of course 'stored' in the brain, as discussed earlier, in the section on therapeutic psychology (chapter 8.3).

3. Formal analysis of physical and mental urges

We analyzed in detail some basic bodily urges, and showed that similar features can be found in other physical urges and in mental urges, stating that these differ essentially only in the way our attention is drawn to them. Physical urges are triggered by certain sensations either originating in the body or caused by external objects, whereas mental urges spring from thoughts. We also noted that mere impulses differ from urges in lacking the factor of inevitability. Impulses involve stimulus and standard response, but no time limitation; there is tendency in them, but no urgency.

a.To begin with, let us review (with new numbering) some of the salient features of physical urges and their closest mental analogues, with particular emphasis on aetiology:

1. Some event is *bound to eventually occur*. This event, or at least its timing, is undesirable[14]. The time limit involved may not be known with any precision, but instead indicated by the increasing intensity of physical sensations. In the case of mental urges, the time frame is often emotionally highlighted, though it may have been intellectually estimated.
2. But fortunately, the untoward event can *voluntarily* be slowed down for some time, or preempted. However, it cannot be indefinitely retarded, and the time allowance for its preemption is limited. As we have explained, preemption may be positive or negative. The consciousness involved in the volition may range from minimal (so-called involuntary) to maximal (fully aware).
3. If the event or its time of automatic occurrence seems inopportune, the agent may be increasingly influenced by *the prospect* of such occurrence or mistiming to take some suitable voluntary steps to retard and/or preempt the event. Note the words inopportune, prospect, influence, voluntary and suitable – implying valuation, cognition and volition at various stages. Even in the case of physical urges, the central events are mental.
4. The initial sensations or thoughts, that made the agent aware of the event, do not force him to act in any way; he may choose not to intervene. If the agent intervenes inappropriately or too late, or does nothing about it, the undesirable event occurs anyway, at whatever time natural circumstances happen to make it occur.
5. Relieving an urge, whether by an act of will or by letting things happen by inertia, does not mean ridding oneself of it forever. After a while, it may reappear. This is particularly true of natural bodily urges, though it may even apply to mental urges.

This list suggests that urges can be formally defined through a series of statements, including modal categorical and conditional propositions. Thus, we might label the agent concerned A, and the event X, and so forth, and state concisely: "X will inevitably happen to A by time T, unless A retards such event (inertial X) by will for a while or until A preempts X by willing X (or notX, as the case may be) before X naturally occurs, etc." However, the above detailed description serves as definition just as well.

Our analysis makes clear that an urge may be viewed as a 'causal *nexus*' – a series of causal relations of various kinds together forming a common pattern. The same is true to a lesser extent of an impulse; it has some of the components of an urge, but not the more pressing ones. Both are more complex than the relation of influence, which they involve among others.

What should be examined next is what we mean here by the modality "*inevitable*" – for it is clear that this term has many nuances.

- In its strictest sense, we mean by it a *natural necessity*, something deterministically bound to occur eventually come what may. This sense would apply to the natural bodily urges earlier described; for instance, once we need to pee, we are eventually bound to. A more conditional version of same would be *natural inertia*, meaning: within a certain existing framework, the event is inevitable, but if this larger context is changed, the inevitability might not hold. For example, the patient will 'surely' faint if not fed, but that won't happen if the patient dies.

[14] E.g. in hunger or thirst, lack of nourishment is undesirable, whereas is incontinence it is not the waste disposal that is undesirable but its timing.

It should be added that natural inevitabilities do not apply only to the body or its physical surrounds. The mental domain also has a 'nature' and so is subject to natural necessities and inertias. For example, if one behaves in certain foolish ways, one is bound to eventually suffer certain unpleasant consequences, like neurosis or madness.

- The concept of inevitability can be further broadened with reference to *artificial necessity*, and further still with reference to *artificial inertia*. For examples: in a legal system, a penalty may be obligatory once sentenced, or it may be open to review. Clearly, such artificial inevitabilities apply in situations organized by someone's volition (one's own or some other persons'). They may be physical as well as mental; for instances, the penalty may be capital punishment, or it may be social stigma.

The concept of urge can further be broadened, by acknowledging the fact that the inevitability and/or its timing need not be *real*, as so far implied, but may be merely *imagined*. The urge, be it physical or mental, is based essentially on the agent's assumption that there is inevitability (of whatever sort) and/or that the undesirable event will happen within a set amount of time. Such assumptions are sometimes justified, and sometimes erroneous – but in either case, the urge has the same stimulating power. Error is perhaps more common in the case of mental urges; but even bodily sensations and physical perceptions may be wrongly interpreted.

It follows from the above analysis that we can emancipate ourselves from physical and mental drives that we find inappropriate, provided we remain lucid. We should try to always be aware of the forces impinging upon us, identifying their nature and sources, checking their underlying premises, evaluating the benefits and dangers inherent to them, and confronting them if they need to be rectified. It is preferable to be proactive than reactive – as the saying goes "a stitch in time saves nine".

As already stated, to insure personal freedom of action, it is necessary not to identify with the urges or impulses concerned, i.e. not to consider them as part of one's essential identity. The object is not, however, divorcing oneself from one's passions, or rigidly controlling them, out of fear of them. Internal harmony and peace, and 'spontaneity' and ease in action, are highly desirable. The most efficient way to find the right balance is through meditation: achieving inner calm, everything naturally falls into place.

Humans have free will – but that is a potential we have to daily actualize. Doing so, the self asserts its mastery of the house of matter and mind it inhabits.

4. Are there drives *within* the soul?

We may ask the question: are there *spiritual* urges and impulses, by analogy to physical and mental ones? Is the term spiritual appropriate, or are all non-physical ones mental?

A common early experience of meditation is that thoughts of all kinds (e.g. focusing on a sensation or memory or emotion; projecting a mental picture or sound; verbal discourse, anticipating, planning; etc.) seem to have a 'momentum' of their own – seemingly **'***against our will***'**. They are not (or not always) entirely involuntary, but often (if not always) involve some voluntary mental activity – and yet we do not have instant and total control over them (at least not till we reach a certain level of mental calm through meditation).

This is a paradoxical experience, which needs to be explained. How come human will does not have immediate and full control over the mental if not material functions at its disposal? Why can I not *stop* mental turbulences at will, and get on with my meditation? What is it below the surface that *drives* thought, making it semi-automatic if not completely hectic? How do obsessions, and more broadly compulsions, work?

The mind, as well as the body, would seem to have its own mechanistic inertia. Our primitive response in the face of such impulses is to 'follow' them, doing what they impel us to do. The soul (through its free will) tries gradually to gain ascendancy over these naturally moving mechanisms, i.e. to resist them and become more autonomous. At first, only some aspects may be immediately accessible to willful interference. As we become more calmly focused on the spiritual self, and cease to identify with mind and matter, we are able to more and more control them. Control is not a matter of greater force, but of finding the correct point of leverage.

If we grant the postulate of freewill, that the soul's modus operandi is always and exclusively volitional, it means we reject any notion that inertia or coercion are possible in the 'spiritual' domain, i.e. within the soul. It is therefore an assumption that *all* involuntary events occur outside the soul (in body or mind, or beyond them in the

rest of the world), never in it. This implies that, although it is cognitively receptive, the soul in itself has no 'passions' of volition. Influences make a direction of will 'easier or more difficult' for the soul, but do not literally push or pull it in any direction.

This theory may make our inner life seem extremely bland and dispassionate, and some may well wonder if it is accurate. They will argue that we do seem to have drives, pressing on us or drawing us hither and thither. It does appear that there are influences that do not merely increase or decrease the effort requirement of our volitions, but which at least are programmed to occur *unless voluntarily stopped*. If that is true, then the soul might be said to have 'real' drives, at least in the way of internal 'inertial processes' (if not causative necessity).

But the issue is: are such (seemingly) 'spiritual inertias' really occurring in the soul, or in its physical and mental surrounds? I very much doubt that any such inner impulse or urge could move the soul into acts akin to volitional acts even with the soul's acquiescence (let alone with determinism). The soul's typical 'acts' seem to me such that they can only be performed by the active will of the soul. I suspect the nature of these acts is such that only the soul can carry them through to completion.

> However, to be clear, we have to distinguish here between *the soul's willing (positive)* from its totally *not-willing (negative)*. Otherwise, we would have to assume the soul is always obliged to will, whether a positive or a negative goal. It would never be at rest, never uninvolved. This would not be a true picture of our inner life. When the soul positively 'acts' (either willing or deliberately not willing), it creates something new in and for itself. But obviously, when the soul 'does nothing', it still has some description – viz. the way it happens to be thus far. The latter situation is not to be counted as 'inertia' in the above sense.

If we carefully analyze situations involving drives, such as the 'hard to control' thoughts mentioned above, we find that the events that are 'inertial' are entirely in the realm of causation, in body and/or mind, i.e. outside the soul. For instances, speaking out or imagining something. In such cases, there is a natural process in the nervous system or in the rest of our body that, either in general or in certain specific circumstances, is bound to occur, unless the soul volitionally interferes and stops such a development. The soul's volition, or abstinence from volition, is entirely in the realm of the soul; whereas the precise inertial event, whether it is allowed to proceed or prevented, is entirely outside the soul.

> In truth, even our most subtle feelings, such as the positive and negative moods or esthetic responses that poetically put seem to permeate our very soul, do not really occur in the soul proper but in the adjacent mind. Although very subtle, they are still internally perceived phenomena, and not intuited experiences. Therefore, they act on the soul like all other influences, making its volitions easier or harder, but are not essentially within it.

Though hard to prove with finality, this doctrine seems more probable. However, see the further reflections below, which give more consideration to the different ways consciousness is implicated in volition.

5. Formal analysis of spiritual urges

We have just considered where in the psyche seemingly inertial events like obsessions and compulsions might be located, and concluded that they could not be assumed as spiritual (i.e. in the soul) consistently with will and its freedom, but must be regarded as mental. This, as we shall now show, suggests certain formal differences in some mental drives.

There is *a special class of mental urges*, which deserve particular attention. As we saw earlier, the volitions we call 'unconscious' or 'inadvertent' are so called, not because they lack *all* consciousness or deliberation, but because they have a very *minimum* of it. The adjective 'involuntary' is paradoxically applied to certain of our volitions, only hyperbolically in the way of self-reproach for insufficient attention, not meaning literally to imply total non-volition.

We may on this basis construct a logical form of urge that, instead of opposing natural or artificial inevitability (necessary or inertial, real or imagined) to voluntary retardation or preemption, opposes an agent's so-called ***involuntary (i.e. minimally conscious) will*** to the same agent's ***voluntary (i.e. more conscious) will***. By this means, we are at last able to clearly formalize the 'spiritual inertias' most of us experience daily in our thoughts

and actions. We can thus explain why obsessions and compulsions seem to occur by themselves although they obviously involve will; and even against our better judgment, although we are essentially beings with freewill.

> Our proposition is that *although such urges do involve consciousness and will, **more effort** of consciousness and will is needed to prevent or stop them than to start and continue them*.

A habitual routine involves consciousness and will, but it is *relatively* effortless compared to the investment called for by any attempt to overcome it, so we repeat it on and on and thus reinforce it. This explains the analogy between 'spiritual' inertias and natural inertia: an extra effort is required to transcend them. Just as in the realm of causation, the inertial goes on until if ever diverted by volition, so in the realm of the soul, there are situations where less demanding volitions proceed unless or until more effort is invested. We might thus refer to 'volitional inertia', or keep using the term 'spiritual inertia' to stress the agent's responsibility in the implied indulgence.

Thus, here, (1) instead of referring as above done to some event that is "bound to eventually occur", we refer to a relatively 'involuntary' volitional activity; and (2) whereas the former would be "voluntarily slowed down for some time, or preempted", the latter would be relatively more voluntary (i.e. require more effort of consciousness and volition). In both cases, (3) mental events determine the response. And, finally, (4) if the response is "letting things be", the event that occurs here is continuation of the 'involuntary' behavior; after which (5) the whole cycle may resume. The analogy is manifestly apposite, allowing us to use the term 'urge' in both cases.

These specific mental urges may be distinctively called 'spiritual urges', for the reason already stated. We can then (briefly) define such urge in formal terms, as follows.

> "**Agent A has an urge to will W**" means "**if A does not voluntarily will notW, then A involuntarily wills W**", where 'voluntary will' refers to conscious volition and 'involuntary will' refers to subconscious volition, i.e. volition with the minimum amount of awareness needed to perform it and no more. It is logically obvious (since W and notW cannot both occur at once) that "if A does voluntarily will notW, then A does not involuntarily will W", so this need not be added.

I would like to emphasize the importance of this finding. Having previously formalized physical and mental urges and impulses, and here spiritual ones, we can now safely assert that *in all human drive contexts, the agent retains freewill and responsibility*. Until now, a doubt could subsist, because vagueness of conception allowed some theorists to give the impression that the agent could be essentially passive and therefore unaccountable. But our descriptions show that his personal involvement is quite conceivable, and thus serve to confirm it.

For example, Freudian theorists *subdivide the person into conflicting forces, segments or entities* – the ego, id and superego; or the conscious, subconscious and unconscious; and such like – in an effort to explain various behavior patterns and psychological effects. However, though such concepts may well serve a useful therapeutic purpose[15] out of context, from a broader philosophical point of view they are counterproductive, because they needlessly split up the self into impersonal heterogeneous fractions, and thus put in doubt the soul's fundamental liberty and accountability. Thus, such theories ultimately obstruct explanation, stopping us from asking how the unitary self may function in conflicting ways.

The scenario of spiritual urges is, to repeat, as follows: some involuntary will W is about to be or has been put in motion; but the opposite notW can still be voluntarily willed; the agent is increasingly influenced by the undesirable prospect of W, until he voluntarily wills notW. In other words: W seems desirable at first sight (due to the little effort of cognition and evaluation expended), and the agent naively pursues it (using minimum consciousness); then the agent (suddenly investing more effort of consciousness and will) reviews the situation and revises his estimate of the desirability of W, preferring notW; this influences him to make the extra effort of consciousness and will to pursue notW, instead of W. Note that notW logically signifies anything that is contrary to W.

The direction of will W need not in itself be harder than notW; the opposite may in fact be the case. However, W may be initially preferred by default, in the way of an instinct, while notW requires intelligent reflection. That is, W may be the first choice because it is more manifest, so that one tends to attach to it unthinkingly, without comparing it to others; while notW has to be sought out to be noticed.

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[15] Which I tend to doubt, since as far as I can tell such a disintegrated vision of the psyche is likely to produce psychological conflicts.

Notice that our brief definition does not mention the awareness of something influencing A to will W or notW. The involuntary will of W may have one set of influences (say, I) and the voluntary will of notW may have another set of influences (say, J). Among the latter (J) may be a dawning 'self-awareness' by A of his involuntarily willing or about to will W; the agent may then realize he does not want to proceed further in that direction, and voluntarily will notW instead. However, the influences labeled J may equally well exclude such self-awareness and the ensuing negative motive, and be concerned with some entirely other purpose and a more positive motive.

Therefore, although the involuntary or voluntary volitions involved in 'spiritual' urges, as all other acts of will, may be facilitated or made more difficult by various influences, the latter are not central to the logic of such urges. The essence of such urge is that an unconscious willing is incipient (a velleity) or ongoing (actual action has started), and that this proceeds until and unless hindered (prevented or reversed) by an opposite and more mindful act of will. Therefore, these urges as such are not necessarily influences.

One may or may not notice what one is doing, before doing the opposite. The agent need not cognize his impulsive act (the unconscious willing) to awaken his counteraction (the mindful will). Although such extra awareness may on occasion make the latter easier, it may in some cases make it more difficult and in other cases have no influence at all.

A spiritual urge constitutes an 'objective' situation, in the sense that the agent, although essentially free, has somehow become locked into a certain course of action, from which he cannot extricate himself without a special effort of consciousness and will. This is more constraining than the situation of influence, which does not imply any prior commitment or engagement.

The velleity or actuality of the involuntary will involved in such urge of course does have causes. The main cause is the soul's initial choice or decision to will in the direction concerned; this may be referred to as self-programming. This initial posture or performance may well be – indeed is likely to be – influenced by mental or material considerations. The latter may be the natural alignment of phenomena (terms and conditions), or phenomena more or less intentionally set up by some other agents (for example, commercial advertisers or political propagandists or 'social engineers').

The resistance or counteraction to spiritual urge, i.e. the voluntary will in the opposite direction, similarly has causes. The main cause is the agent, asserting or reasserting his freedom, either losing interest in the initial will or gaining interest in the new will. Each of these options may as usual involve various supportive or adverse influences, which may again be natural or social phenomena. Finally, the soul deliberately wills to dominate and deprogram its previous will.

Whereas rectifying improper physical and mental drives constitutes a struggle of the soul against forces relatively external to it, revising improper spiritual drives signifies a struggle between the soul and itself. By preferring consciousness to carelessness, we take responsibility for our actions and attain self-mastery.

13. The Quasi-Purposive in Nature

1. Purposiveness

The concept of ***purpose*** is initially and primarily one relating to human action. We mentally visualize, or conceptually and verbally project, a state of affairs that we would like to bring into existence or to ensure the continued existence of, and proceed to do what we consider necessary to achieve that aim. The goal may be something within us – a spiritual quality (such as strength of character) or a mental content or skill (such as knowledge of logic) or a bodily condition (such as not catching a cold) – or it may be an external acquisition (such as a meal or new clothes). The means is something we do to fulfill the desire concerned.

> Thus, propositions concerning purpose basically have the form "I am doing this *for* that", or more broadly "**agent A does X in order to achieve or obtain Y**". Such a proposition concerns volition, its subject (A) being a human agent, the means (X) being some act(s) of direct or indirect will by the agent in hopeful pursuit of the goal (Y), which has been projected by the consciousness of the agent.

Note that the agent may be right or wrong in thinking that Y is at all possible to him (let alone 'good' for him!), and he may be right or wrong in thinking that X specifically is something that can lead him to Y. Indeed, he may admit that his goal Y is uncertain and/or that his proposed means may be inadequate, and still be considered as doing X for Y.

In a second phase, the concept of purpose is passed on to higher animals (those assumed to have volition), and such propositions can be used for them too. And as we shall see further on, in a third phase, the concept is applied *by analogy* and in a diluted sense to the non-volitional functions of our and their organs, as well as to other living organisms (without volition) such as plants; we may refer to such 'as if' purposes as *quasi-purposive*.

Furthermore, we commonly apply the concept of purpose to inanimate objects. This does not mean that we consider such objects to choose purposes for themselves, or to have inherent natural purposes. They have the purpose *we* – i.e. any volitional being – *assign* to them. This refers, then, more precisely to the ***utility*** of the object or some part of it to the purposes of some agent. The useful object may be artificial or natural. For example, the utility of a chair is to be sat on by people; a chair is an object designed and manufactured with this use in mind. For example, a monkey uses a stone it picked up to break open a nut; although a natural object, the stone (by virtue of its original size and weight) has utility for this monkey.

Works of fine art are, of course, commonly considered as intentionally 'without utility'. But this is using a restricted sense of the term utility, without excluding the utility of aesthetic expression (for the artist) or pleasure (for the viewer or auditor), or of communication (between artist and admirer) or of offering (to God or other loved one). What we would prefer to exclude from artwork are vanity and mercantilism (the pursuit of fame and fortune), and other such more materialistic and less spiritual aspects of human endeavor.

2. Organic functions

The definition of the concept of function in biological discourse is simple and clear:

> The 'function' of an organ (i.e. of any part of a volitional or non-volitional organism) and of its characteristics and activities refers to **the causative role that these play in *the preservation, development and furtherance of the life* of the organism as a whole** – or more broadly, in widening circles, in the furtherance of the life of its kind(s), or of life on earth.

This, note well, is a derivative of the concept of *causation*, not of volition. When we use the term function in volitional contexts, we intend the purpose or utility of the entity, character or action concerned in the achievement

of some more or less conscious end, as already discussed. Here, the term function refers to something *unconscious*, i.e. it is intended as analogous to purpose or utility but *without implying an agent's goal*.
Nevertheless, the concept of organic function is somewhat analogous to that of willed function, in that the organ seems to tend to the survival, improvement or reproduction of the organism. It is quasi-purposive.
Many philosophers have struggled with this issue, trying to reconcile the idea of mere causation in nature with the impression that life tends to life, as if some mysterious inner force impels it in that specific direction. In particular, Aristotle proposed a concept of '*final cause*'[1] to cover such unconscious tendencies. Others have compared such apparent striving to conation, and named it '*conatus*'. Modern biology has explicitly eschewed such teleological explanation; although in practice, at least in elementary or popularizing texts, the discourse of biologists is implicitly full of quasi-purposive expressions[2]. (If the reticence is justified, it is necessary to analyze why such linguistic habits persist and what more consistent and accurate verbal formulae might practically replace them.)
Yet, as the definition of organic function proposed above shows, we can have our cake and eat it too! It is an observable fact that certain material entities differ in some significant manner from most others: for instance, if you plant a seed in the ground, it grows into a vegetable that eventually gives birth to new seeds; but if you plant a stone in the ground, it may suffer changes by erosion or by fusion with other stones, but it will never 'reproduce'. On the basis of such observations, we have over time distinguished between living beings and minerals (inanimate matter).
The peculiarity of living beings is that (although natural, and not man-made) *their parts are organized in systems, sustaining each other and the whole in various ways*. Of course, nowhere in an organ or organism is there a sign where it is written "I am doing this for that". Still, unlike non-living entities, all (or more precisely, most) the qualities and activities of life *demonstrably cause* (i.e. are natural or at least extensional *causatives* of, or in Aristotelian language: are efficient causes of) continuation of individual life (or more broadly, through procreation and social protection and support, the life of the species or of the genus, or life as such).

> The expression "**for**" (or similar ones, like "**so as to**" or "**in order that**") allows us to communicate briefly a lot of information, concerning organs and the direct and indirect outcomes of their features and movements. For example, teeth are organs "for" eating. The shapes of some of them are such as to enable them to cut food up; the shape of others, to crush it. As the upper and lower teeth are moved against each other, they begin the digestive process that results in nourishment of the blood with new matter, which keeps the body (including the teeth) strong and healthy.

It should be stressed that the epistemological basis for a claim to quasi-purposive events in living matter is not merely that *the isolated* event under scrutiny results (by mere causation) in longer and multiplied life, but that *all (or most)* events in living matter have this same concrete and abstract result. The reason we have to admit an incomplete frequency – saying 'most' instead of 'all' – is that we do observe a minority of parts, traits or activities of organisms to be (or occasionally, become) useless to life or even antithetical to it. These situations we put aside as abnormal or diseased[3], considering them as effectively incidents or accidents in life processes.
The concept of organic function is thus not directly ontologically evident, but a product of adductive logic. There is no logical irregularity in its formulation or defense. It is an empirically based hypothesis, a tool of discourse through which we manage *to collect and order* our observations of certain entities, characters and movements in the natural world. It facilitates biological discourse, placing particular observations in a wider system of explanation. It is a causal concept entirely based on causation, and not on volition. It is not purposive, but merely quasi (*as if*) purposive.
All the concept of conatus asserts ontologically, then, is that ***the physical processes of life (mostly) take a certain direction (more life) rather than any other (less life)***, just as we might for instances propose that 'bodies continue in their state of rest or uniform motion in a straight line unless acted upon by a force' or 'like charges repel,

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[1] See **Appendix 2** on Aristotle's doctrine of "the four causes".

[2] For example, when we say "Nature does so and so", or similarly reify a species making it seem like an agent, or tacitly imply the events – which it is a passive subject of – to be its activities. Such anthropomorphisms are often concealed in the use of equivocal verbs, like 'adaptation'.

[3] For examples, an extra finger or a cancerous breast.

opposites attract'. It simply refers to certain causative necessities or inertias for certain classes of natural objects (namely living organisms, not dead ones and not inorganic matter). We can simply say: 'things just happen to be so' or 'that is their nature'. The idea of inherent orientation is logically quite compatible with the ideas of natural law and physical mechanism.

We can argue that just as, at a subatomic (quantum mechanical) level, events may appear naturally spontaneous, and yet, on a larger scale (of visible physical bodies), they seem ruled by natural laws – so may the directionless events of inanimate matter *collectively* (when brought together in the specific structures of life) result in the effectively directional events of animate matter. Here again (as we saw in the discussion on volition in relation to the laws of physics), what prevents some scientists from admitting conatus is their *reductionist* mentality, their dogmatic[4] refusal to consider that 'the whole may be more than the parts'.

No conscious purpose is intended by it, and there is nothing mystical or metaphysical about such an underlying force[5]. Indeed, although the concept of organic function may have originated by analogy to that of conscious target (keeping the idea of goal, while artificially dropping its implication of consciousness) – volitional function may ultimately be viewed as a subset or special case of organic function, in the sense that the volitional agent generally thinks he is serving his life by pursuing his goals.

We may on this basis envisage the development of a '***natural ethics***', one with simply 'life' as its standard of value, or *summum bonum*. However, the main difficulty facing such an undertaking would be precisely to arrive at a consensus as to the meaning of the term 'life' which can be variously understood, in a materialistic, psychological and/or spiritual sense, with reference to the individual or more universally, in one lifetime or many, and so forth. Everyone claims to be pro-life in one sense or another! For example, abortionists do. The question is: whose life? Or: what sort of life?[6] So, we come round full circle.

> Nevertheless, I think the logical problems are surmountable, probably by means of dialectical or dilemmatic arguments. Such arguments may have forms like: "**whether Y or notY is preferred, the requirement is still X rather than notX**" or "**whether X or notX is pursued, the result is still Y rather than notY**", where X, notX refer to alternative intermediaries and Y and notY to alternative consequences. Certain means are necessary, whatever the ends one pursues; and there are certain overarching outcomes, whatever our chosen course. We might by such teleological reasoning reach at least some common ground.

It follows that, *from a biological point of view, the soul and its faculties and functions (cognition, volition and valuation) should be regarded as no different from other organs of the living organism possessing them, whether physical or mental*. The spiritual 'organs' are equally functional, tending towards the maintenance and perpetuation of life. Their complexity compared to other organs gives them increased sensitivity, flexibility and power to fulfill that function; but also, this very advantage increases the possibilities and probabilities of error and breakdown.

The *natural* imperative to life inherent in all organisms, as a sort of conatus, is transformed into an *ethical* imperative to life in specifically conscious, volitional beings, in proportion to their cognitive powers and freedom of will. In lower animals, cognition and volition function instinctively, whereas in higher animals, there is progressively more mindful choice, reaching a peak in humans; and indeed, in the latter species, there is also a range of behavior, depending on the spiritual development of each individual.

Note lastly that our above definition of organic function is broad enough to include not only the functions of organs of individual organisms, but also *populations* of organisms. Reproduction minimally implies transmission of life; but in many species (even some plants), the parents continue to support (e.g. feed, protect, train) their

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[4] I say 'dogmatic' because it is a doctrine adhered to without specific proof (i.e. without experiments and mathematical formulae deriving the living from the non-living), but *by anticipation.*

[5] It is a secular concept, although theists remain logically free to assert that this state of affairs was instituted by the Creator or is regulated by Providence, i.e. that nature was or is so programmed. Similarly, animists may suppose an underlying 'will of Nature'.

[6] For example, in the case of abortion: "whose life?" – adult needs or desires are favored over those of the unborn; "what kind of life?" – the life of the aborting adult is thenceforth weighed down by the selfish choice made.

offspring for some time. Individuals not directly related may help each other within a variety of social arrangements, in groups of various sizes (like a small tribe of ants or a large nation-state of humans).
Moreover, different species may behave symbiotically, effectively favoring each other's life. Sometimes, they are not merely of mutual use, but unilaterally or mutually dependent. One species may actively cultivate another in order to feed on it. Culling may be useful to the group culled, preventing depletion of environmental resources. Even when no benefit to the victim is manifest, one species feeding on another may be asserted to have as function the maintenance on earth of life as such or diversity of life or higher forms of life.
Although inanimate matter per se cannot be said to have functions, we may of course say that it is ***used*** in many unconscious life processes. For example, plants use nitrogen and sunlight for their growth. This enlarges the concept of utility that we introduced earlier with reference to conscious purposes.
In conclusion, we have here shown that it is possible to formalize 'functionalism', with reference only to causation and to the common character of certain natural entities called life. We have thus shown quasi-purposive events in an unconscious nature to be conceivable, and justified teleological discourse on this basis.

3. The continuity of life

As we have seen in the previous section, the great majority of the features and processes of the organs of living organisms have 'functions', meaning that they play some causative role in the support of life. This object of organic functioning, i.e. 'life', may be understood at many levels. In a first phase, we apply it to the physiological factors of the individual living being. Later, with respect to the increasing complexity of animal and human life, we apply it to the psychological factors, the mental and spiritual.

a. One of the great discoveries of modern biology is that, despite their many differences, all living organisms are composed of one or more tiny 'cells', which are visible to everyone under the microscope[7]. Some cells are devoid of a nucleus (prokaryotes); others have one (eukaryotes). The former include bacteria and other unicellular organisms; the latter, both unicellular and multi-cellular organisms – plants, fungi, animals and humans composed of up to billions of cells. Thus, when we refer to a potato plant, a cat or a man or woman as 'an individual' organism, we are already really discussing a symbiotic grouping of smaller organisms (the cells that make up the organs that make up the whole organism).
Upon further reflection, it is becomes evident that life is not just an individual phenomenon, but applicable to populations. This is not mere metaphor – in many species, the individual has no chance of survival for any significant duration in isolation from the particular group (family unit or larger) it belongs to. In effect, the group is the organism and the individual is a mere organ of it, with a specific function in relation to the whole (for example, a bee in a hive). It is a prejudice of human conception to regard 'an organism' as necessarily something whose organs are all spatially contiguous and inseparable. We can also logically view as 'an organism' an entity whose parts can move around some distance apart from each other for some time, provided the interactions of the parts are sufficiently important to them all.
Moreover, since all living things reproduce, we may consider offspring as organs of their parents, and parents as organs of their offspring. Again, these are not mere words, but reflect material and temporal continuities. In some species, notably among higher animals and humans, behavior, information and material possessions are also passed on from generation to generation. Such genetic and cultural inheritances are artificially ignored in conceptualizing discrete individuals. Furthermore, parents (plants or animals) may support the life of their offspring for some time – feeding them, warming them, protecting them from predators, and so forth. Sometimes, the offspring later in turn serve the parents in various ways, and may even serve each other (which refers us back to the groups above discussed). Thus, any line of living organisms may ultimately be viewed as a single organism changing form over time, splitting up and merging.

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[7] Viruses are not cellular; however, they are not independent organisms, but rather bundles of genetic material and protein that multiply parasitically.

Thus, at least some groupings of two or more living organisms may be viewed as single organisms with detachable parts, the function of such parts being to ensure the subsistence and to enhance the life of the whole – as in the case of organs stuck together, only with greater flexibility. This concept is applicable to the continuity of generations in any family line, as well as to population groups that may include many families.

The causal relations involved in such spatial and temporal, as well as material, mental and spiritual, continuities are all basically of the form: "***without the organ, the organism could not live or would have much more difficulty doing so; with the organ, the organism's chances are made possible or increased***". This formula clearly applies to parts of individuals and to individuals within groups. Cut out our hearts, we die; cut off our left hand, our chances of survival decrease; without our parents, we would not be born or survive long after birth; without the younger generations, the older ones are doomed as soon as they weaken; taken out of society, most of us would quickly die off.

All of this suggests *the continuity of life*. Moreover, life is truly uniform in a material sense, as suggested by another crucial finding of modern science, namely: *the universality of the genetic material of life (DNA)*. We can also point to numerous anatomical, metabolic, behavioral and other similarities between living beings to buttress and broaden the concept of continuity. For example, the observation that ontogeny retraces phylogeny (how a human fetus successively resembles a fish, then a reptile, and then a lower mammalian with a tail) is impressive.

b. We might go one step further in this widening perspective on life, and argue speculatively that ultimately *all life is one*, i.e. all living organisms on earth are apparently part and parcel of one and the same giant living organism. This is here conceived, not to 'prove' some pet thesis, but merely to put the continuity of life into perspective, taking the concept to an extreme for the sake of argument.

The ecological perspective is significant in this context. The single living organism inhabits a *mineral* environment that is always in flux due to physical causes (like the Sun's rays, ice forming or melting at the Earth's poles, wind, rain, floods, etc.). But additionally, this environment is constantly changed by that living organism, wittingly or unwittingly. Furthermore, within this theoretical overall creature, neighboring species and individuals constitute the *organic* environment for each other at any given time and place, together with the mineral surrounds. Plants compete with each other for space and mineral resources; sometimes, they effectively cooperate, as when one species provides the chemicals needed by another; plant life provides a changing theater for animal life; animals destroy, cultivate and eat plants; animals hunt, raise and eat other animals. Thus, the vegetable and animal environment is also constantly in flux. Species in the same geographical region interact, and likewise individuals in the same group. All living beings in a given milieu very dynamically interact and affect each other to various degrees over time.

As earlier mentioned, there are sometimes symbioses between individuals or groups of different species or genera. For instance, one may feed and protect another, and feed on it or be protected by it – as in the relationships between humans and wheat, cattle or dogs. Going further, we could interpret the situation when one organism eats another, as the same larger living entity exchanging its parts, feeding one part of itself with another, moving matter and energy around itself. On this basis, we could argue that it is 'natural' for a lion to eat a gazelle, and that the gazelle does its job in the wider context by being eaten. One kind is made tributary to another.

If we consider in one dramatic sweep the history of life on earth[8], since its appearance some 3,700 million years ago, about 800 million years after the formation of the planet, the idea becomes quite *thinkable* that it is all one organism, which has over time split-up into a multitude of 'detached organs' (individuals) composed of a multitude of 'attached organs' (components of individuals)[9]. Each such 'organ' of the whole organism comes, moves, reproduces with others, changes and goes, in reaction to changing conditions within the organism itself

[8] I make no attempt here to describe this history in detail, but every reader should make the effort to read about it, and get acquainted with current discoveries and scientific theories. There are many excellent books on the subject; and of course, there is lots of interesting material on the Internet.

[9] I am here of course referring to the self-replication of the first unicellular organism(s) – the prokaryotes, followed some 1,800 million years ago by the eukaryotes; and then to the first multicellular organisms, aggregated algae appearing some 1,500 million years ago. Animals only made their appearance much later, less than 600 million ago.

(the organic environment) and its mineral environment, always tending to the conservation of life as such, the life within it – life being nothing other than this very behavioral tendency.

Some such extrapolation might eventually be found useful for the development of a natural ethics. Some ecologists use this idea of *the unity of life* to encourage widespread protection of nature, in an age when mankind is destroying more and more of it. Some contend that this is excessive and utopian, though I doubt mankind will ever be guilty of self-destructive altruism! No doubt, a balanced model is conceivable – one that erects reasonable *hierarchies of value*, which give due consideration to human social needs while maintaining a broad focus on maximum protection of life on earth.

14. Concepts of Evolution

1. The logical form of evolution

Our discussion of the 'quasi-purposive' in nature brings us to the topic of 'evolution', which some have claimed to be a case in point. Keeping an open mind, we shall examine the issue. Evolution primarily means change – progressive change over a long time such that the later appearances differ considerably from the earlier ones.

The term is sometimes used in physics, to describe the history of inanimate matter from primordial quarks through astronomical events to heavy atoms, organic molecules and finally (so far) to living cells. In biology, it is used to refer to changes of population groups (species), implying a more radical sort of change than the mere 'development' of individuals, which term refers to the growth of an organism (its organs becoming more formed and functional, cells dividing and multiplying, and so forth, making the whole more competent to deal with the demands and dangers of living).

Note that my interest here is not in fully detailing, and justifying or criticizing, any biological theory. I gather that there are difficulties in the subject, many of which have no doubt been resolved, and many perhaps not. I admit at the outset that I am not qualified to judge between the pros and cons. My approach is philosophical rather than biological. It could be considered an investigation (to my own satisfaction, as a logician) into *the discourse* relative to evolution – i.e. what is meant by the propositional form "X evolves to Y"; what sort of more basic causal propositions underlie it; what concepts does it appeal to.

Now, in my earlier work *Future Logic*[1], I dealt with the logic of ***change*** in some detail – with reference to two main forms of change:

- '**Alteration**', where some individual thing classed as X and not Y to begin with, is classed as X and Y at a later time; for which I used the form "this X got to be Y".
- '**Mutation**', where some individual thing classed as X and not Y to begin with, is classed as Y and not X at a later time, for which I used the form "this X became Y".

In the former case, the individual remains X while it changes from notY to Y; whereas in the latter case, the individual ceases to be X before it changes over to Y. Note that it is possible to *rephrase* alteration as mutation (this X-notY became X-Y), or mutation as alteration (this thing, that was X-notY, got to be Y-notX).

These forms are of course quantifiable, i.e. we can say 'all X' or 'some X' instead of 'this X'. Such forms are useful to discussion of movements of individuals from one class to another, while remaining essentially the same in some respect or without remaining essentially the same. Needless to say, they ignore intermediate stages, but such complications can be dealt with by appropriate specifications. However, such forms are not applicable to evolution, though they may be used to discuss aspects or portions of it.

The word 'mutation', as here used (i.e. by the logician) seems to correspond to that intended by biologists in the expression 'genetic mutation'. For the reader's information, a 'gene' consists of a long chain of molecules with certain properties. Genes (singly or collectively[2]), in conjunction with some environmental conditions[3], determine many of physical traits and processes, including many behavior patterns, of living beings. They are inherited from generation to generation since life began, ensuring that attributes of parents are reproduced in offspring, essentially unchanged.

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1 See chapter 17 there.

2 I refer here to polygenic inheritance, where one trait is a function of two or more genes. Sex-linked traits are an important case in point.

3 Such as light or darkness, heat or cold, dryness or wetness.

> Without getting too deeply into biochemistry, the essential molecular structure involved in genes is DNA, which consists of four nucleotides labeled A, C, G, T. The latter can only be physically paired in four ways TA, CG, AT, GC, which are respectively labeled U, C, A, G. The latter in turn constitute the four letters of genetic coding; these may be combined in 64 sets of three letters (called codons), i.e. UUU, UCA, GAU, CGA, etc. These triplets give rise to only 20 amino acids (and three other molecules that act as 'stop signals'). A few hundred amino acids may combine in a repetitive series; for example, CAU-CAU-CAU-etc. That is the molecular structure of a gene.
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> The same gene may be said have two or more variants – if we now understand the term 'gene' with reference to *the biological role it plays*, rather than to *its exact chemistry*. For instance, the gene controlling the color of the flowers of a pea plant. Such variants are called 'alleles', and the molecular difference between them may be just one amino acid in a chain of several hundred. In our example, there is one allele for purple flowers (dominant) and another for white ones (recessive). When these genes are brought together in reproduction, they behave according to certain rules, giving rise to the numerous variations between the individuals of a species. Generally speaking, genes are stable and reproduce predictably.
>
> However, very rarely (perhaps once in a thousand or a million), mutation occurs in genes, due to chance[4] physical causatives, such as radiation or chemical pollution. Genetic mutation may consist of the substitution, deletion or addition of a single letter of genetic code, but this radically changes the nature and effect of the gene. For examples, in the series CAU-CAU-etc., if a U is deleted, we obtain CAU-CA↓C-AUC-AUC-etc.; alternatively, if a C is added, we obtain CAU-**C**CA-UCA-UCA-etc. Note how the CAU sequence is not lost, but shifted over by one. If the mutation occurs in sex cells or cells giving rise to them, the mutant gene is transmitted to eventual offspring (which may or not survive and in turn reproduce).

Thus, from a logical perspective, if we symbolize (these symbols are invented, not drawn from genetics) the original gene as O and the mutant gene as M, mutation is expressed in a proposition of the form "gene O becomes gene M". If, alternatively, we consider O and M to be 'the same' gene K, in the sense that both refer to the genetic key to some specific biological trait or process (like flower color), without specifying the precise variation (e.g. blue or red color), then we can describe the change from O to M as alteration of K[5].

Another form important to biology is of course the form of ***reproduction***, say: "X reproduces Y", where the terms X and Y refer to *similar individual entities*. This form not only implies *a change* (i.e. at least, the arising of Y), but also signifies *a causal relation* between the terms (the first gives rise to the second, somehow). The individuals involved may be whole organisms – or they may be genes. In either case, the form might be applied to a parent and its immediate offspring, or more broadly to the offspring of its offspring, etc.

> Note that I have, above, presumed genetic mutation to imply the form of logical mutation (as above defined), such that an individual gene (O) has itself physically *become* another individual gene (M). The mutant gene M might then go on and reproduce faithful copies of itself. But it would also be conceivable for the genes concerned (O and M) to be different individuals, the former giving rise to the latter by a faulty duplication process and the two coexisting for some time. In this alternative scenario, genetic mutation would not imply logical mutation, but a form of reproduction not implying physical continuity between the parent gene and its immediate offspring, a relation more akin to that between a parent and the offspring of its offspring. I do not know enough biology to say whether such 'unlike reproduction' ever actually occurs.[6]

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[4] Note that the same mutation may occasionally occur in different individuals, although the probability is small.

[5] In such case K signifies all the molecules that O and M have in common, except those that differentiate them.

[6] Words are in any case not the issue. The vocabularies of logic and philosophy on the one hand, and of the special sciences (such as biology) on the other, are related but not always identical in connotation. Sometimes, as here, the logical word is more rigidly defined than usual; in other cases, the opposite occurs, as for example with the terms "genus" and "species", which in logic loosely refer to any overclass and subclass, whereas in biology, they are more specialized.

In the case of ***evolution***, a distinct form "**species X evolves to species Y**" must be used, such that the individuals subsumed by the initial class X are not the same units as the individuals subsumed by the final class Y. Note well: the units of class Y *are not and never were* units of class X – so this is quite a different logical situation to alteration and mutation!

Here again, note, we only specify the starting and ending states, though there might be a long progression of changes (alterations and mutations) in between them. Yet, some sort of continuity is implied, some *causal* thread tying the initial and final units – in biology that is the fact of reproduction or affiliation: the former units are ancestors and the latter are their descendents. Furthermore, the causes of the changes involved are not specified or implied, but must be separately clarified using appropriate causal propositions. The chronology, or time between the terms, can also be separately specified.

In evolution, the individuals subsumed by a class procreate other individuals of the same class, but these are over time slightly altered or mutated; and at some point, the changes are so pronounced that we can no longer regard the new individuals as belonging to the same class. In evolution, one class (or a segment thereof) is effectively replaced by another, a bit as in 'mutation' an individual undergoes a change of essence. Thus, the form of evolution has aspects of both extensional and natural modality, in that it its terms do not refer to the same individuals and yet a real continuity between them is implied. As we shall see, this modal duality also occurs in other aspects of evolution.

> The way of reference involved in this propositional form is thus neither distributive, nor collective, nor collectional (as in other forms) – but something new and more complicated. It is that (only) some members of class X end up as all the members of class Y; and moreover, the continuity between members of X and Y is not (usually) due to individual threads, but involves mergers (sexual intermingling) every which way at every generation, over many generations.

Note that, just as we could rephrase mutation as alteration by focusing on a broader class as our subject ('thing' instead of 'X') – so in the case of evolution, if we focus on a genus common to both the starting and ending species, such as 'living beings', the propositional form can be modified to imply a less radical change. For example (excuse me if I have any facts wrong), instead of saying "mesohippus evolved to merychippus", we might say "equus (the genus of horses) '*passed from*' mesohippus '*to*' merychippus". The words chosen (e.g. passing) are not so important – what matters is that the formal relation involved is quite different.

Such changes of perspective allows us to keep in mind what is unchanging in the midst of change; for instance, throughout the history of evolution, the fact of life has remained a constant, while only its particular expressions have changed.

A new chapter must be written by logicians in the logic of change, treating the propositions concerned with reproduction and evolution in detail. I will not attempt to do the job here, but move on.

2. Evidence for evolution

The term evolution should first be taken neutrally, to refer to any *apparent* changes in species of living organisms, since *whether* such change occurs is also (to begin with) open to debate. Secondly, if such change is admitted, the question arises as to *how* such change might occur; and here different hypotheses have been proposed, one of them being Darwin's 'theory of evolution' and its later improvements.

Another issue arising in this context is whether such eventual changes can be considered directional in any sense – i.e. whether evolution can be viewed as a sort of 'conatus' in the sense described in the previous chapter, giving life the possibility to persist in changing circumstances.

With regard to the first issue, the paleontological and geological evidence at hand is clear: various fossil remains are found in different strata of the earth, which can be scientifically dated by various techniques. It has been observed that earlier strata contain fossil forms that later strata lack, and vice-versa; and in general (with few exceptions), earlier forms have been structurally simpler than later ones. Whence we can infer that life on earth has not always had the same forms: species have come and gone; and in particular, mankind and many other species populating the earth today are relative latecomers.

All our experience shows that life begets life, and no life in our experience emerges from non-life. Granting that later species did not just pop up out of nowhere, but must have come from somewhere, it is reasonable to suppose that they evolved from earlier species. This is called by some the 'fact' of evolution, although it is of course based on inference.

Note that such inference involves a movement of thought from 'difference' to 'change'. In the *extensional* mode of modality, we speak of 'change' when we simply mean static differences from one instance *of a kind* to the next instance of it, because what changes is the appearance of things before the observer as he shifts his attention from one specimen to another. This is different from 'change' in the *natural* (physical, spatial, temporal) mode of modality, which refers to different appearances *of the same individual* over time.

Such a movement of thought is not in itself epistemologically illegitimate, provided we well understand and remember that *it is inductive and not deductive*. That is, the extensional mode evidence is used adductively, to confirm the natural mode hypothesis – but it does not definitely prove it. More evidence must be adduced if possible; and no empirical evidence should be found that definitely denies the hypothesis. If we remember that, since we have not actually monitored species giving rise to new species in our lifetimes or in the laboratory, this inference is only based on indirect evidence, we remain open to correcting it if such evidence to the contrary is found.

And indeed, biologists do not only rely on fossil discoveries to support the idea of species change. They also point to morphological, metabolic, genetic and other uniformities, which further strengthen this first hypothesis – indeed, so much as to make it almost undeniable. These analogies, by the way, also involve some inferences from the extensional to the natural mode of modality. It seems reasonable to suppose that similar organisms must have descended from common parents, but it is not totally unthinkable that in fact completely independent parallel trees of life occurred under uniform natural laws.

> Say (for the sake of argument, though this description of things is unproved, and one might well ask why it has not recurred since) that life[7] chemically arose in puddles of water filled with 'organic' molecules (containing carbon – perhaps amino acids) under the impulse of lightning (an energy input). Two possibilities exist: either the formation of the first living cell was a *one-time* freak event, from which all life on earth today descends – or *many* 'first living cells' may have thus arisen independently of each other in different places over a long period of time, and given birth to distinct yet similar lines, many though not all of which endured, and some may even have eventually converged (sexually intermingled). The implied question may admittedly not have much importance, but is here raised to emphasize that the mere facts of genetic and other uniformities do not answer it.
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> Does biology advocate an individual organism at the root of all life on earth, a unicellular equivalent to the Biblical Adam; or is the hypothesis of plurality of first cells to be preferred? One could argue for 'monogenesis', by saying that it is less onerous to assume a statistically unlikely phenomenon like the formation of life to have occurred just once than many times. Or one could argue for 'plurogenesis' by saying that, once the favorable conjunction of natural conditions was there, random explosions of lightning would likely produce a multitude of such results in scattered puddles over a long time, rather than a unique accident. Since matter generally reacts uniformly to uniform conditions, these first living organisms would likely be similarly composed and structured.

Another, more direct body of evidence for the changes possible in life is the experience of plant and animal breeding by men throughout history, producing varieties with little resemblance to the originals[8]; for examples, how thin wild grasses became rich domestic wheat or barley, or wolves eventually turned into dogs of all shapes, colors and sizes, from Chihuahuas to Saint-Bernards. Nowadays, also, genetic engineering provides evidence of

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[7] We do not yet know the origin of life. Most biologists suppose life naturally arose on earth, when environmental conditions became suitable. But some suggest simple bacteria arrived from outer space attached to meteorites (leaving aside the issue of how, when and where they were formed).

[8] Although not changes of species, so far as I know. That is, dogs and wolves may reproduce together.

possible change, although so far (to my knowledge) species changes (that are viable and capable of reproduction) have not been demonstrated in the laboratory[9].
Certainly, anyway, the genetic analysis of all species that is currently underway in biology will resolve a great many or most issues of taxonomy and genealogy. We who are curious about it are very fortunate to be living at this historical time[10].
Granting the fact of evolution to be a reasonable assumption in the light of all available evidence, the next step is to try and convincingly explain *how* such change occurs – i.e. its aetiology. Charles Darwin (1809-82) proposed in 1859 a neat theory to explain this phenomenon in a naturalistic manner, i.e. without assuming some mysterious force akin to voluntary agency residing within unconscious living matter, and without appealing to Divine intervention at every turn.
This 'theory of evolution' was later improved upon, when the genetics work of Gregor Johann Mendel (1822-84) became known in 1900 (though first reported in 1865). Darwin spoke of biological 'variations', but had no clear idea as to how they might occur. Mendel, using quantitative experiments, discovered more precisely how variant characteristics were transmitted from parent to offspring, through what was later called genes. The 'synthetic' theory, combining Darwin and Mendel, has been further refined since then.

3. Random mutation

Our concern here is not biology, but what aetiological lessons we can draw from it. One of the concepts used in evolutionary theory that has to be examined is that of 'random mutation' of genes. It should be noted in passing that Mendel had not foreseen genetic mutation, but only variation through the interplay of dominant and recessive genes. It was Hugo de Vries who in 1902 observed that genes could occasionally undergo radical changes. Later, in 1927, some of the agents of such mutations were identified by H. J. Muller; x-rays, UV light and certain chemicals were found to be mutagens.
Genetic mutations are an ordinary, though rare to very rare, part of life. Taken individually, their impact on the species is minimal. It is estimated, for instance, that every human being has about two new mutations in the midst of its 100,000 genes[11]. Over time, a few of these mutations might conceivably become established, but most will not. Mutations do not by themselves determine the direction of evolution.
When biologists speak of *random* mutations, they mean that the genetic mutations that do occur are *not necessarily* such as to increase the organism's overall chances of success in the environment it finds itself in. The mutations might well be beneficial to the organism, or equally well be harmful, or even neutral; also, they might be viable and capable of being passed on to subsequent generations, or again they might well not be so. Therefore, it cannot be claimed that genetic mutations are programmed into the organism, with the quasi-purpose of improving its chances for living. This is emphasized, to exclude any idea that the gene somehow 'detected' a certain environmental feature, and mutated in such a way as to better 'adapt' to that feature.
Moreover, the term random, spontaneous or chance mutation is not intended to appeal to a notion of natural spontaneity (i.e. to quantum mechanical effects). The mutations are considered caused, in the deterministic sense of causation; we have already mentioned some of the causes or mutagens. Such radiation or chemicals are indeed part of the immediate environment of the genes, causing them to mutate. But the mutation is a mere physical reaction of the gene; it is not akin to a 'response to stimulus'. It is not necessarily such as to make the organism more resistant to dangerous radiation or chemicals; indeed, very often such mutagens damage the organism irreparably.
Furthermore, terms like 'chance' used here are meant to stress the *coincidences* of events involved. Coincidence refers to two or more chains of events coming together at a certain time and place; they may all be quite

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[9] And I must say, I personally find the idea of genetic manipulation of living beings (especially animals, but even plants) utterly obscene and criminal. My mentioning it is not intended to be an encouragement or a sanction.
[10] I recently read that fungi are genetically in some respects closer to animals than to plants!
[11] See Curtis and Barnes, p. 522.

determined, and yet their meeting is (relatively) a matter of chance. For instance, an organism may stray into a polluted place, which is not part of its natural environment; e.g. a plant seed blown by the wind or a wandering animal landing in Chernobyl. Here, 'chance' could refer to the unpredictability of most purely physical events in practice, even when they are in theory understood; or more broadly, to the possibilities of volition (by animals or humans).

With regard to human volition, we are now quite able to intentionally produce mutations, by applying appropriate radiation or chemicals. More impressive still, is the advent of genetic engineering. In this light, we should enlarge the concept of mutation, including both artificial and natural mutation in it. The term 'random' mutation applies only to the latter, and not to mutations due to volitional intervention.

Natural mutations are said to be random to suggest *although they of course have physical causes, these are isolated events and not systematic reactions to physiological conditions in the organism concerned or physical conditions in its environment*. This idea was intended in opposition to an alternative theory to Darwin's, suggested by Jean Baptiste Lamarck (1744-1829)[12], that characteristics acquired by parents in interaction with the environment could be inherited by offspring.

The latter thesis would mean that, as its habitat and body goes through changes, from whatever efficient causes, an organism might develop adaptive genetic reactions or responses, which would increase its chances of survival. A sort of regulative or feedback mechanism was implied. In the case of plants (and the equivalent functions within animals), such reactions would be unconscious – events produced directly by purely physical laws. In the case of animals (at least the higher ones, including humans), the reactions could be called 'responses', insofar as they might occur indirectly through the mediation of consciousness – i.e. upon seeing (or otherwise sensing, and maybe even conceiving) such and such an environmental or bodily configuration, the organism automatically prepares appropriate genetic changes that increase its chances of survival (or those of its offspring).

Note well that I am not proposing any personal theory here, but only (as a philosopher) considering the variety of conceptual instruments at our disposal, i.e. to develop some sort of flow-chart of possible questions and possible answers. To better understand Darwin's evolution theory, it is necessary to understand Lamarck's alternative thesis, since the one is intended in opposition to the other.

It should be noted that the changes of outward characteristics (phenotypes) here discussed are those necessitating genetic mutations (genotypes). We are not concerned with physical (or other) developments that are already programmed as *immediately potential* in the present genetic configuration, and which may become *readily actualized* under appropriate environmental, physiological or volitional conditions – for examples, as a muscle may be expanded by exercise, as a skill may be acquired by training or as knowledge may be increased by learning. The Lamarckian thesis suggests that such actualizations of potentials may in turn generate new potentials (logically, of course, the latter are already 'potential' – but less immediately so, requiring as they do a restructuring of their underlying matter).

When Lamarckism mentions 'inheritance of acquired characters', it refers to such deeper modifications – in the code of life. Some physical or mental event or process, such as the new use of an organ in new surrounds, triggers (perhaps not always, but when a special need for it is signaled) a change in the genetic information, so that the next generation does not need to repeat the acquisition process but has the character by inheritance. Lamarckism claims that *genetic* mutations may non-randomly result from significant causes like environmental changes or physiological conditions or even intentional work.

The famous example given is that of giraffes, whose necks were thought by Lamarck to have progressively grown each generation 'so as to' reach foods higher up on trees; meaning that, upon finding food often too highly placed, individuals strived to reach it, and their genetic material was modified to match the new conditions thenceforth. In this way, according to said thesis, evolution is mechanically 'programmed' into life, though in a flexible and not overly mechanistic manner. In other words, genetic mutations are *functional* events; like blood flow or sensation, they are a means through which life perpetuates life. A *conatus* is implied: some sort of unconscious striving or tendency to further life is inscribed in the organism.

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[12] And indeed, I gather, at some stage by Darwin? However, his final theory is free of this assumption.

The Darwinian thesis, on the other hand, while allowing that physical causatives are behind the randomness of genetic mutation (as with any physical event), denies all systematic relationship between specific environments (or resulting internal conditions) and particular directions of change. Mutations may well be – and evidently often are – of no value to life or even antithetical to it. The fact that some mutations seem to conveniently improve the organism's chances at life in changing circumstances should not be taken as evidence of any inherent loading of the dice in that direction. Random mutation suggests that the chances for favorable mutations are on average no greater than those for unfavorable ones or for mutations that are neither favorable nor unfavorable.

The hypothesis of Lamarck is not unthinkable; a world in which individual organisms are so made as to react or respond to changing conditions constructively, passing on their improvements to their offspring, is conceivable offhand. But biologists have come to the conclusion that the less orderly and predictive hypothesis of Darwin is more congruent with all empirical data discovered or considered to date. Needless to say, I accept that judgment.

Even so, I wonder if we could not *still* consider Darwinian evolution as an 'unconscious striving' of sorts. I ask the question, not out of some reactionary wish to reassert an old idea, but from a philosophical perspective – the need to make a fair assessment of what our common concepts contain and exclude. It seems to me that we can harmonize these at first sight antithetical concepts, as follows.

We could view random mutation collectively as precisely *the expedient used* by life to statistically ensure its survival in every possible environment it might encounter over time. This supposition is nothing special; analogies can be drawn. We need only look out of our window and see how trees yearly produce thousands of seeds, no two exactly alike, of which maybe one or two specimens at most will give rise to new trees. Life works like that: mass-producing trials on the off chance that some specimens get past the obstacles in their way. Instead of the more obvious Lamarckian expedient of *ad hoc* genetic changes, nature has apparently opted for reliance on the law of averages.

In that case, random mutations are on the whole life-perpetuating acts, fitting perfectly in the general definition of life as a series of all sorts of self-perpetuating acts. Even though genetic mutations are *individually* 'products of chance', *taken all together* they constitute one of the resources life has at its disposal for its own survival. In this respect, genetic mutants are essentially no different than genetic variants. They are 'blind experiments', in the same way that a root grows straight out till it encounters an obstacle or a mouse unknowingly decides to head due west till it encounters a cat – except that they occur at a more radical level and the opponent they face is the environment as a whole (many different environments) over a long time (many, many generations).

Why presume life has to be either static or changing in orderly ways? It may well be viewed as 'programmed' to change in scattered ways. The unpredictable can also be granted the status of 'conatus', provided its *overall* effect is furtherance of life! The fact that some (or even most) blind experiments fail does not disqualify them from quasi-purposive status, since even conscious experiments may fail and fail again yet be considered purposive. By thus broadening our perspective, we acknowledge species evolution, *however* it occur in fact, as a perfectly natural life process, rather than considering it as an accident. Random mutation is then not an inexplicable dysfunction of genes, but a quite normal function, serving to further vary possible adaptations to possible environmental changes and thus increase the chances of survival of life as such.

Ultimately, life does not (so to speak) 'care' what form it takes, so long as it continues. Thus, what seems accidental relative to a *particular* form of life appears quasi-purposive for life *as a whole*. If we imagine life on earth as one collective organism, we may assign it an abstract 'organ' of genetic mutation. This organ is inherent in the genes in every particular organism, in the way of a mode or law of functioning applicable to genes. From time to time, it churns out random genetic combinations, which may or not prove useful in some circumstances for the maintenance of life on earth.

Thus, without at all denying Darwinism, but on the contrary acknowledging it, we may apparently still affirm evolution as a sort of 'unconscious striving'.

4. Natural selection

Another concept worth looking into for aetiological reasons is that of 'natural selection'. This is the idea that the new characteristics emerging from random genetic mutations may over time persist and spread in a group, either

displacing the old ones or coexisting with them. If a characteristic is not compatible with the surroundings, the individuals that have it will naturally pass away and no longer reproduce it; while if a characteristic happens to be more or less adapted to the environment, it will proportionately persist and spread. This is called 'survival of the fittest'[13]. Of course, if an individual does not reproduce, it is irrelevant to evolution, whatever the adaptability of its genetic content (although it may play an indirect role by otherwise affecting other individuals or the environment).

Here again, the conceptual intention of the principle is determinism, i.e. to explain observed events in terms of causation *rather than* by means of seemingly more obscure or remote causal concepts. As with random mutation, the basic appeal is to coincidence in a causative context. This hypothesis is preferred to competing ones, like natural spontaneity, some sort of conatus, animist 'spirits' or Divine volition, in accord with the general direction of modern science in favor of simplicity and order. Causation is thus (rightly) regarded as the explanatory doctrine to be relied on first and foremost, before any alternatives are even proposed; the latter only come into play when and if causation is found clearly inadequate.

Determinism is claimed in this context, by considering the eventual volition of humans or higher animals as within and part of nature, i.e. as for all intents and purposes a subcategory of causation. That might be justified by arguing that we are here concerned with the lives of species on a grand scale, i.e. over very long periods of time (millions of years). In such case, the impact of individual animal (including human) volitions becomes irrelevant; they average out as if causation was involved.

However, the issue may be further debated, pointing out that when volitional beings affect their own lives or the lives of other volitional beings or of non-volitional beings, determinism is not (strictly speaking) the only causal principle involved. In particular, when animals struggle together and kill each other, or when they eat or otherwise destroy plants, it is not mere causation but volition that is the cause of death.

That such destruction by will, whether intentional, incidental or accidental, has large scale effects on whole species can hardly be doubted. Even in our own lifetimes, we have witnessed mankind destroying a great many species of flora and fauna. Furthermore, we are now just beginning to enter an era of genetic manipulation, which may result in widespread species changes that have nothing to do with natural selection, unless the term 'natural' is stretched to include the 'artificial' (i.e. the works of mankind and other volitional beings).

Other factors of species change, besides genetic mutation and natural selection, mentioned by biology are gene flow (this refers to movements of individuals from one population group to another, which tends to make populations more uniform), genetic drift (this refers to the chance isolation of populations, which reduces their genetic variety) and non-random mating (including self-pollination by plants, and preferential mating among animals). Note that some of these factors involve consciousness and will.

It should be stressed, too, that living organisms of all kinds constantly modify their mineral environment. The oxygen our atmosphere is graced with started to accumulate only some 2.5 billion years ago, thanks to photosynthetic activity by cyanobacteria; plants re-condition the soil they are in; mankind makes great changes all around it. Thus, though the environment also or mainly depends on factors external to life (the Sun, continental drift, volcanic eruptions, meteors, and so forth), it is to some degree an effect of life. Furthermore, when we speak of 'the environment' relative to a given species, we mean not just the mineral world around it, but the world covered by plants and roamed over by all sorts of animals. When discussing natural selection it is well to keep these complications in the concept of environment in mind.

The notion of natural selection is, from its inception, based on analogy to artificial selection. In the latter, the human experimenter chooses individual specimens of a plant or animal possessing certain desired characteristics, and gets them to reproduce; and then again, among their offspring, he selects those he prefers, leaving out those he is not interested in, and gets the new generation to reproduce; and so forth, until he obtains a generation that will reproduce the desired characteristics in all offspring. Natural selection is conceived as similar, except that the

[13] Incidentally, I wonder why some alleles are dominant and others recessive? This seems to me 'directional'. The value of variety seems obvious: to increase chances of survival under different conditions. But given variety, why are not all variants of a gene equally frequently reproduced? If the dominant allele is so because it is better suited to most conditions, why is the recessive kept on?

selection is not intended by a person, but is happenstance due to the accidents of random mutation and changing natural surrounds; over time, the theory predicts, these accidents also effect certain group changes yielding new uniformities.[14]

The Darwinist concept of evolutionary "adaptation" of species to their environments refers to an essentially *passive* process. Individuals actively adapt – in the sense that a plant's roots grow around a rock or its leaves turn to the Sun, or that an animal finds shelter from the storm in a cave or fights a foe and eats it. But species as such 'do' nothing other than live on through reproduction of some of their members; they 'adapt' only figuratively speaking. Those individuals, *if any*, that *happen to be* already genetically adapted to their current milieu in each generation, due to previous variations or random mutations, survive and pass on their genetic code to most of their offspring, which in turn may be well adapted or not, according to their genetic makeup and the environment they encounter.

Species some of whose members continue to be sufficiently (if not perfectly) adapted to their environment continue to exist. If the environment changes over time and all genetic forms (including all random mutations) composing a species are inadequate, the species ceases to exist. If random mutations occur, able to survive in the new changing environment, the species evolves along the same lineage (anagenesis).

Additionally or alternatively, some members of a species may stray into another geographical area and survive. This group may over time change characteristics due to random mutations in its genetic pool, more appropriate to the new environment. Gradually, these variations may become so pronounced that in comparison with the original population a new species has effectively evolved, which cannot reproduce with the old one (speciation). Another group, straying into another geographical area, may evolve quite differently, and form yet another distinct species. Again, although these had common roots, they may have diverged so much that they can no longer interbreed.

This is the Darwinian perspective (roughly put: it has of course been greatly elaborated on and improved since its inception, and continues to be perfected and enriched), and it seems indubitable. It explains so much throughout the science of biology that it cannot be ignored, and has earned general admiration.

However, as pointed out in the previous section, it could be construed as a conceptually narrow view, tracing the courses of *particular* species. Looking at things more broadly, by considering life on earth *as a whole* throughout history, or life as such, events may seem more directional. The evolutionary changes of particular species then seem more like effective reactions or responses of the collective living organism of our biosphere to the varying mineral environment external to it, as well as internal interchanges between its various parts (the species and their members). Random mutation coupled with natural selection is simply one of the 'strategies' living matter uses to maintain life in a changing mineral, vegetable and animal world.

When life almost disappeared on a number of occasions (for instance, 80-85% of all species, including 95% of all invertebrate marine species in shallow waters, were wiped out some 225 million years ago), the earth's putative 'single living organism' did not die, but was forced to take new forms starting from a more limited genetic pool. Such recoveries took millions of years. But they might be compared (roughly, conceptually) to a lizard losing its tail and growing a new one. Life has all its potential histories within its genetic material. Supposedly, given an eternity and an infinity of environments, every possible form would be tried by life.

Perhaps, also, any life form surviving a mass extinction could give rise to all others again; but it may be that regressions are not always possible. It may be that though humans may evolve from bacteria, the reverse is not true under any circumstances. In the latter case, even if small regressions are occasionally found, evolution may be said to have a direction, from simpler to more complex forms of life. In any event, as Stephen Jay Gould stated: "Wind back the film of life and play it again. The history of evolution will be totally different"[15].

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[14] Note that some natural selection is involved in artificial selection, in that fertility may be diminished or lost.

[15] See *Conversations*, p. 41.

15. More about Evolution

1. Social Darwinism

Darwinism has, since its inception in the latter half of the 19th Century, been influential beyond the field of biology proper, in ethical as well as economic, social and political theorizing and commentary, some of which has been pernicious. Under the heading of 'Social Darwinism', racism, exploitation and violence were given a boost, causing much suffering to many people. Although similar ideas existed before Darwin published his theories, they gained credence and prestige from their superficial association with such an important work of biological science. Using pseudo-scientific discourse extrapolated from Darwinism, ideologies like Hitler's could thenceforth pretend to justify conquest and domination.

Concepts like "the struggle for existence" and "the survival of the fittest" seemed charged with meaning, suggesting that biology condoned harsh, dog-eat-dog societal practices, pitting people against each other and judging whoever won the contest to have naturally deserved to win. Alternatively, the necessity of "adaptation to the environment" could be interpreted as a biological call to fit-in socially and not make waves, to accept and not rebel, to be subservient to the powers-that-be. The doctrine served both to justify the oppressors and to keep their victims docile.

Here, we wish to ask the question – is such reasoning logically appropriate? Given that human society is from a biological viewpoint an ordinary population grouping, one might well infer that such concepts can legitimately be applied to it. But if there are conceptual errors concealed in such discourse, what are they – i.e. what are the limits of the Darwinian concepts of evolution?

To begin with, it should be admitted that the conceptual error is not entirely on the side of the Social Darwinists – they were dished out a *misleading terminology* by Darwin himself. Terms like 'struggle', 'fittest' and 'adaptation' were no doubt chosen as approximations illustrating certain aspects of evolution, but the ignorant and their manipulators could readily misconstrue them as confirming a 'law of the jungle' scenario for society. In principle, epistemologically, these choices were of course legitimate; as our knowledge develops, we frequently expand and contract the meanings of existing words to match new data. But they were unfortunate, in that they were easily misused.

Paradoxically, such terms are based in the human (and animal, or at least higher animal) experience, but applied by the biologist *by analogy* to the whole range of living beings (including bacteria and plants), who thereby gives them new and specialized connotations. The Social Darwinist then comes along and picks up these same terms, reapplying them to human society, in view of their anthropomorphic flavor, glossing over the biologist's precise intentions, and concentrating exclusively on the images the terms superficially project by virtue of their original meanings. Although the terms have returned to their original domain, they have in the interim acquired subtle ethological significations.

Thus, the phrase 'struggle for existence' projects an image of fighting for one's life against difficult odds and powerful enemies; the phrase 'survival of the fittest' implies that in this life and death struggle whoever won is naturally the best man, who in fact deserved to succeed all along, as his victory proved ex post facto; the phrase 'adaptation to the environment' suggests a scenario of submission, which the losers if they at all survive must remain content with, serving their masters, keeping their tails well between their legs. These dramatic connotations were conveniently adopted by the Social Darwinists, under the pretense that they came from biology.

What such phrases have in common, in their original senses, before Darwinism used them as biological expressions, is the underlying human (or animal) *consciousness and will* they imply. When biology co-opted them, it applied them indiscriminately to organisms without these faculties, notably bacteria and plants. Moreover, the harsher aspects of the original words were simply abandoned in favor of wider and softer applications. For

example, when a flower appeared in nature, with a brighter color than hitherto, one more attractive to pollinating insects – this was labeled by the biologists as an 'adaptation', a maneuver in the 'struggle' and an increased 'fitness'.

Apart from such terminological misappropriation, Social Darwinism involves serious misunderstandings of the *concepts* of biological Darwinism. Evidently, bacteria and plants cannot be said to have purposes, since they lack consciousness and will – their 'actions' can only at best be regarded as quasi-purposive, in the sense that they apparently de facto have a common direction, viz. the perpetuation of life. Thus, the flower in our example did not 'do' anything that could literally be characterized as adapting, struggling or becoming fitter; the flower can claim no credit for its evolution. According to Darwinism, there were just random genetic mutations, which happened to be physically compatible with surrounding conditions that happened to occur.

The concept of struggle for existence, as understood by biology, treats every possible behavior pattern under the same heading. It is not limited to situations of conflict or even of difficulty, but covers every aspect of the life of individuals and populations that happens to be 'good for' them. In this broad perspective, cooperation, sharing, mutual service and symbiosis are equally forms of 'struggle' – they are expedients adopted by the organisms concerned – consciously, or of course (by analogy) unconsciously, as the case may be – to further their own lives, by means of exchanges of goods and divisions of labor. Even true altruism (to the extent of self-sacrifice) may be assimilated under this concept, if separate individuals or groups are conceived as really parts of the same whole. Tolerance and peace are also expedients. Social Darwinism foolishly or cunningly ignores such nuances.

Furthermore, Social Darwinists misunderstand natural selection. Survival is not a product of conquest or at least compromise in some dramatic struggle of the organism with other organisms and with the environment. Survival, even for humans, is not proof of some sort innate fitness or personal credit; things are not that simple, orderly or satisfying[1]. As Darwin was careful to stress, survival is mostly a matter of plain *luck*. The law of averages makes some individuals or groups survive and some die off, with little or no regard for their genetic potential.

For example, a city tree has thousands of seeds; most of them fall on the pavement, with no chance of ever germinating; one or two may fall on the lawn under the tree and not get raked away by the gardener, each giving rise to a seedling; then comes the lawn-mower and puts an end to that attempt, though one seedling may be missed and grow on for awhile. In this example, the seeds all have genetic content of more or less equal value for the furtherance of life, though some may in fact be more robust and fertile than others; but it is generally mere chance and *not* their relative genetic potential that has determined which finally survived.

The same truism applies to all individual lives. Lightning may strike a tree, which falls and kills the dominant monkey in a group – supposedly, the best genetic specimen; it was not killed by any inherent unfitness, but by bad luck; there was no fault in its makeup that differentiated it from its mates, that earmarked it for genetic extinction (assuming it had no offspring before) – it was simply in the wrong place, at the wrong time. As, indeed, was the tree. The trees and monkeys spared by that accident of nature may in fact be genetically much weaker and in the long term have less chances of survival, so that the world's genetic pool has in fact been impoverished by those two deaths.

Similarly, with regard to whole species: The existence of the human species today is just, according to biology, due to the mass extinction of the dinosaurs about 65 million years ago when a giant meteor struck planet Earth. The dinosaurs were eminently 'fit' for life here, more so than the mammals, since the former did much better than the latter for over 130 million years, keeping them small and insignificant. Only after these essentially fitter species were wiped out, could the mammals (those that happened to survive the cataclysm) emerge, diversify and grow, eventually giving rise to the human species.

It may be that if dinosaurs had survived, they would have in time given rise to species far superior to the human (i.e. more intelligent and more powerful, in the best senses of those terms). Maybe the genetic strains that did survive the catastrophe, and give rise to the human species, were by far inferior in every respect, except for a lucky break. One could of course argue that the mammals were proven fitter by the very fact of their survival; their fitness consisting presumably in being smaller (under 25 kg) and thus able to take shelter from the physical upheavals that destroyed the dinosaurs (though not all of them, note – since reptiles, birds, and other of their

[1] If they were evidently so, everybody would believe in God and Job would never have written his book!

descendents persist). But this argument is rather circular, because it treats exceptional events as on a par with routine events.

Fitness, or adaptive capacity, should not be construed as implying a sort ability in principle to somehow preempt eventual disasters. In our above example of the tree and monkey struck down by lightning, the natural event involved was such that it would have killed any other tree and monkey that happened to be there at the time. The trees and monkey that survived had nothing notably different in their makeup; nothing saved them other than coincidence. In particular, the surviving monkeys did not sense the lightning coming and scatter.

Some commentators, after similar reflections, have suggested the expression 'survival of the luckiest' would be more accurate. More precisely, we might say that, within the range of those biologically *fit enough* to survive in a give environment, the fittest are not always the luckiest. The specimens that do 'make it' are not necessarily the ideal candidates. I shudder to think of all the great genes destroyed in natural disasters, and due to human wars and environmental devastation. Ours is not 'the best of all possible worlds'.

The concept of fitness (as here described) is faulty not only because it ignores the important factor of luck, but also because it is applied in an undifferentiated manner to the whole organism or species, rather than to specific characteristics, and is then used for comparative purposes. It should be kept in mind that (a) each fitness is relative: what is fit in one respect may be unfit in other respects; and (b) overall fitness is an average: the same individual or group may have more characters that are usually more fit than characters that are usually less fit, and so be declared 'on the whole fit'; therefore (c) comparisons of fitness between individuals or species are not very meaningful, since different circumstances are necessarily involved in their respective lives.

If a man is eaten by a tiger, it does not prove the tiger to belong to a higher species than the man. It just means that the tiger is physically stronger than the man. It remains true that, in other respects, the man is superior to the tiger, being able to invent a spear or gun that kills it at a distance, or simply by virtue of being able to write poetry. If the human species ends up eliminating the tiger species, it does not prove the tiger species to have been unfit for life on earth. It just shows how stupid and shortsighted mankind can be. Similarly, in human society: if a thug kills a gentleman, or a Nazi kills a Jew, it is only a demonstration that the former was more violent, and certainly not proof of greater moral or social worth. The victim is not shown genetically deficient or constitutionally less viable.

2. Spiritual Darwinism

Those who believe in Social Darwinism usually wish to flatter themselves that they belong to the class of the fittest; the superior, beautiful people; the dominant elite. I would say that a more logical impact from Darwinism would be to make us kinder, more sympathetic to other creatures. That is its impact on me, anyway. Once we realize that we are all really made of the same stuff, just genetic variations on the theme of living matter, we feel closer to other people, other peoples and other species.

Social Darwinism promoted a culture of racism, claiming a genetic basis for its collective evaluations of peoples. But the 'value' of a person is not in his or her genes, but in what he or she makes of them – in his or her 'virtue'. The dignity of a human being, as of an animal, is in how it responds to the challenges of life with the means at its disposal, the use it makes of its cognitive and volitional powers. In the case of humans, the possibility and necessity of decency towards others seems essential, since violence, hatred and fear are in the long run to the disadvantage of all, even if they may in the short run seem advantageous to some. Nothing in biological science justifies the reading that war, of some against others or of all against all, is natural. For creatures like us endowed with reason and freewill, wisdom, kindness and intelligence are obviously the best course.

It is interesting to note that the image of human society projected by Social Darwinists matches perfectly with the traditional portrayal of the egoist grasping and clinging, climbing over the bodies of all those that are in his way, taking whatever he wants whenever he can. It shows up the essence of Social Darwinism, as a narrow-minded doctrine designed to vindicate selfish pursuits and the social injustice resulting from them. Instead of such mindless behavior, spreading suffering, one may of course propose an enlightened self-interest that considers the

broader and longer-term consequences of one's actions. In Darwinist terms, one could say that only justice, peace and love (excuse the clichés[2]) are over time likely to ensure survival of human life and life in general.

Finally, it is all an issue of quality of life. What kind of world do we want to live in – an obscure place of stupidity and conflict, death and destruction, or a shining place of wisdom and harmony, life and progress? Of course, utopian philosophies and religions can also cause much harm, but they should not for that reason be ignored, constituting as they do mankind's attempts to probe more deeply into such issues.

Can Darwinism, properly conceived (and not as some have historically misconstrued it), assist the humanities (i.e. ethical, social, economic and political discourse)? The time frame of biological evolution is very long, very much longer than the span of human history. The humanities mainly draw on the latter for their empirical data, to predict what forms of social behavior and organization are likely to bring good or bad to individual humans, human groups or humanity as a whole. The survival of the human (and other) species is a legitimate standard of judgment for the humanities, drawn from biology. But within that broad framework, many conjectures are possible, between which we can only judge with reference to history, if only approximately. Many questions faced by humanity remain unanswerable, whether we look to biology or to history, for the simple reason that they deal with novel issues that have no precedent in the past.

In any case, we have seen in the present work the *specificity* of human beings, in terms of their degree of consciousness and volition compared to other animals. These two differentia are radical enough to suggest that whatever conclusions biology may come to with respect to life in general, it has to reconsider them very carefully when trying to apply them specifically to *homo sapiens*. A species that displays such major distinctions is bound to be subject to some more specific, less mechanistic biological considerations. Our fate cannot be left to chance. If humans have the power of choice, then their nature is to refer to ethical discourse, to help them decide in a pondered manner what courses to follow.

It is important in this context to understand the term 'survival' in a large and deep sense. Ultimately, it does not just mean *physical* continuity at all costs; this is only minimal survival. There are greater degrees of survival, ranging from physical health up through psychological wellbeing to spiritual life. The human being, especially, is no mere body, but a largely mental and spiritual entity. Mankind is not just driven by matter, but has other, seemingly 'higher' considerations. Consequently, *the standards* of success or failure may be different for humans than for other species.

A person may succeed materially but woefully fail in other dimensions of his or her being. Another may fail in the material domain yet succeed in the intellectual or spiritual domain. Who is 'better off'? If we insist on applying 'genetic perpetuation' as the only conceivable biological norm, we will prefer the first. But if we allow that at the human level of existence other issues may be involved, we may prefer the second. The fact is, many people are no longer subject to the reproductive instinct, and choose to have sex lives without begetting children, or to become monks or nuns.

Physically, they are naturally selected out; but what does that prove? Perhaps some of the latter function on another evolutionary scale, wherein it is not the genes that matter most but the soul. Perhaps genes only exist to eventually give rise to souls, or as vehicles for souls. The materialist interpretation of things is not necessarily the final word. I mean, from an ethical point of view, it is just a doctrine like any other.

It could be argued, in accord with the biological principle of evolution, that the soul 'evolved' in certain forms of living organism, as *an instrument* of the body, improving the body's chances of survival and reproduction. In a materialist perspective, 'spiritual philosophy' may then be considered as an aberration, whereby the tool (the soul) has forgotten its original function and acquired the pretension that it is life's goal and that the body must serve it. But it is equally conceivable that, once the soul appeared on the biological scene, it surpassed all other considerations in the material pursuits of the organisms that had one.

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[2] Most people would in principle agree with these "politically correct" generalities. However, some people treat "peace and love" as absolutes, which one must impose on oneself without regard as to whether the opposite party does so too. With that, I find it hard to agree – one has the right and duty to self-defense when necessary. That is why "justice" should also be mentioned; it ensures equilibrium.

The latter perspective might be characterized as 'Spiritual Darwinism' – or as *the salvation of the morally fittest* – a doctrine diametrically opposed to that of historical 'Social Darwinism', which refers to the physical or political dominion of thugs. If we reflect, the spiritual principle of salvation of the morally fittest is nothing new; it has always been the basis of spiritual philosophies like Judaism or Buddhism. Some people advance on the spiritual path, and some are left behind or regress. Some people make the effort to evolve spiritually and are 'saved' or 'enlightened'; others refuse to use their life constructively, and remain in darkness or sink further down. So it goes – and few, very few, find their way to true 'survival' – i.e. 'eternal life'.

3. Theological perspectives

Some observers, mostly out of religious motives, do resist the conclusion that there is evolution of species. They point to extreme mathematical improbabilities (approaching zero) of the proposed 'changes' taking place in the time paleontology makes available for them. They also offer statistical arguments against the possibility of life originating spontaneously by random combinations of molecules, in the first half to one billion or even full 4.6 billion years of the earth, or even the roughly 15 billion years of the universe. Furthermore, they argue that the alignment of astronomical and specifically earthly physical conditions necessary for life to emerge was too improbable for chance to be claimed.[3]

Such mathematical objections are certainly impressive, at least to a layman like me. One could for a start retort that the improbable is not quite impossible. Moreover, it may be that there are as yet undiscovered natural processes, or laws of nature, that would significantly reduce mathematical improbabilities once factored into their equations. Before rushing to a non-naturalist conclusion, however satisfying, it would seem to me wise (more in accord with inductive logic) to search for such missing data or laws.[4]

Objectors also contend that the paleontological record still has many significant gaps – and that till such 'missing links' are found, any such conclusion would be premature. They argue that the existence of such apparent discontinuities after over a hundred years of extensive research could be regarded as evidence of real discontinuity.

But with regard to evolutionary transition, these critics give no natural explanation as to how new species might appear without gradually emerging by procreation from previous species. To me, evolutionary continuity is more credible than discontinuity, because it is easier to explain missing links by the reasonable suppositions that (a) the populations of missing species were perhaps relatively small and short-lived, (b) the traces of most living specimens have been destroyed by natural processes over time, and (c) most of the few extant traces are too dispersed and well concealed to have been found – than to try and otherwise explain the observed abrupt appearance of fossils of numerous new species.

Such critics do not propose a hypothesis about jumps from one life form to the next by ordinary reproduction or other natural processes, but one of successive species creations; i.e. they appeal to ongoing miracles long after the initial Creation of the world. So, although their criticism of gradualism is in principle acceptable to naturalists insofar as there are unanswered questions (viz. the missing links), their suggestion of miraculous change is understandably not well received. It lacks weight, not because of atheistic prejudice, but because it is methodologically weak, since a simpler hypothesis (small and ephemeral populations, and destruction, dispersion and concealment of traces) does exist.

Certainly, modern biologists actively address the question and openly debate the issues. They consider four or five patterns of change, based on the fossil record, namely "phyletic change" (gradual "change within a single lineage

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[3] Whence, it is concluded that some Divine intervention must have been necessary – to load the dice sufficiently, as it were. I am not competent to judge the mathematics involved; but if it is correct, the miraculous conclusion would seem justified, until and unless some more natural explanation is eventually proposed. See for instance Schroeder, or the much earlier *Proceedings* of the Associations of Orthodox Jewish Scientists.

[4] There is no particular reason to expect God to intervene in a grandiose public manner in the course of nature. Rather, in my opinion, some sort of naturalist conclusion is to be expected and persistently sought.

of organisms"), "cladogenesis" ("splitting of lineages" based on the "founder effect"), "adaptive radiation" ("sudden – in geologic time – diversification… associated with the opening up of new biological frontiers"), and "punctuated equilibria" (based on "allopatric speciation"), as well as extinction. The theories proposed by Ernst Mayr, George Gaylord Simpson, Niles Eldredge and Stephen Jay Gould, and Steven M. Stanley, are all intended to provide scientific answers to this interesting question of "the tempo of evolution".[5]

One body of the evidence for evolution perhaps most disturbing to creationism is the great number and diversity of species existing and having existed on this planet, as well as the cantonment of different species in different geographical niches. A creationist would say this proves the richness of God's imagination, and his making special spaces for each of His creations. However, if God's ultimate purpose was specifically, as the Bible commentators claim, the creation of humans and the drama of their redemption, why go about it in such a roundabout way?

When the accepted scenario was as in the Bible narrative a seven-day process, mankind could seem like its crowning achievement. But now that science envisions a process of many billions of years, involving the birth, life and death, of innumerable individual organisms and species, only at the very end of which, some 6,000 years ago, does historical man appear, one may well wonder what that was all about!

Why did some species – which may look ugly and stupid to us – exist for hundreds of millions of years and then vanish without descendants in some natural catastrophe? An omniscient Being would not need to make 'experiments' before getting to the point. Although faith is shaken by such reflections, the idea of evolution should certainly not be regarded as intrinsically anti-theistic. Perhaps we ought to view God not as a linear technician, but as a fine artist who wished to add richness and depth to His creation.

However described, evolution can also be imagined as a process run by God, so that what looks like mechanism or chance is really hidden intention. We can say either: (a) He programmed the whole thing since Creation; or: (b) He is behind the scenes at every stage, choosing each turning at every major fork of the way. Or again: He created genes capable of a great many possible combinations and mutations, either (a) letting them naturally change, as secular science proposes, or (b) using them as a potential array of tools for providential interference, as religion prefers. In any case, there is no problem, no difficulty in reconciling the two viewpoints.

As I have made clear throughout, I am personally persistently open to the idea of Divine intervention. But I prefer to leave it as a personal faith (I stress the words personal and faith) *applicable to any and all results* of science, and not as a thesis *in competition with* scientific ones. This position makes it possible for me to retain my own faith in God, come what may in science. Whatever scientists at any time decide seems a true description of nature, I say: "OK—that was obviously God's will"; and if scientists change their mind later on the basis of new evidence or discourse, I just say "OK" again!

The very possibility of such flexibility shows that nothing science discovers or concludes about the world can ever affect faith in God. The notion of God is indeed (as Karl Popper suggested) unfalsifiable; this may make it irrelevant to most scientific inquiry, *but still does not falsify it*. This is one sense in which we can think of God as an absolute: our idea of Him is not relative to any particular view of the world, but compatible with all (though of course, *this is no proof* of God).

However, this principle of tolerance fails if one insists on a rigid literal (as against allegorical) interpretation of certain religious texts, and refuses to constantly readapt one's detailed beliefs to current empirical data and theorizing, continuing to promote received doctrines against all evidence and rational argument, so as to seem unshakably faithful.

The psychology of *religious fanaticism* is worth looking at. The fanatic seeks to appear firmly religious, thinking that such behavior demonstrates possession of the virtues of courage and loyalty. But in fact, beneath this veneer and bombast, excessive religiosity is on the contrary a mark of cowardice and betrayal, which the clerical class (of whatever persuasion) has historically often shown itself adept at exploiting. The victims (and ultimately the clerics are victims too, of course) are taught intellectual abdication, i.e. to relinquish their experience and reason when it contradicts religious dogma, under the threat that if they have different opinions (however well based and argued) they will lose God's and the religious community's acceptance.

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[5] See Curtis and Barnes, chapter 39.

The same frame of mind is programmed in people within a totalitarian society (like Nazism or Communism): to avoid punishment and obtain rewards, on a more material plane, they will admit and do anything the powers-that-be suggest or demand. I do believe that 'fear of God' is a good attitude, a religious teaching that many people unfortunately lack; but I cannot conceive God as wishing people to deny and incapacitate their own minds and those of their neighbors. Truth cannot be served by lying or pretending. Spiritual growth relies on honest witness and rational criticism.

An open-minded religious attitude need not be construed as an outright denial of revelation, or of its historicity; but as an admission that such revelation, if it occurred, may well have been formulated *in the context of* knowledge of man and the world at the historical moment of its occurrence, because its purpose was not anticipation of material information but timeless spiritual guidance. Inversely, any gainsay by scientists of the possibility or existence of God in the context of their findings and ideas is pretentious – it is using their (well-deserved) prestige beyond the limits of their field of study, making 'inferences' that are logically unjustified.

Religious people who resist science[6] do not bring credit to religion, but make it seem mentally retarded. It seems to me, granting God exists, that modern science has *aggrandized* rather than belittled the idea of God. Until recently, the scenario we imagined and believed of the creation of the universe, of the earth, of life and of mankind was very simple. The heavens were not very high, time was not very long, everything was relatively ready-formed and static, the earth was a small theater, and life on it a minor drama.

Now, the universe is perhaps 15 billion years old, containing billions of galaxies each with billions of stars, and black holes, all in motion, expanding. Inanimate matter has itself 'evolved' from quarks to electrons, protons and neutrons, to small atoms, to stars and larger atoms, to stars again and planets, to water molecules and carbon, to life. On earth, there have been massive geological and climatic changes, living organisms appearing and diversifying, a bewildering variety of individual and species fates in a changing environment, punctuated by a few gigantic natural catastrophes causing mass extinctions.

All sorts of weird and wonderful creatures have inhabited this planet for hundreds of millions of years, long before we and most of our most visible neighbors appeared on it. It has been estimated that "less than 1/10 of 1 percent, perhaps less than 1/1,000 of 1 percent"[7] of species ever existing are currently in existence. Humans (in their present garb) are only very recent arrivals on the time line of life on earth. Other species, very similar to humans, lived and disappeared; some even coexisted with our ancestors for tens of thousands of years before dying out.

Surely, this new scenario is much more interesting and impressive. Imagine the unfolding drama of it all over the whole sweep of time. If anything, it glorifies God!

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[6] It should be stressed that such attitudes are not peculiar to Judaism, Christianity and Islam, but equally found in Hinduism and Buddhism. The latter religions, too, *contain many beliefs that are out of step with modern science*. One example (drawn from various texts): the belief that the earth and humanity have always existed, with sentient beings (in human or other form) going round and round the wheel of karma forever, and so forth. These religions, too, did not predict the Big Bang or Evolution.

[7] Curtis and Barnes, p. 552.

16. The Self

We live at a time of cultural globalization, when East and West are meeting and enriching each other. They have of course intersected to some degree at various periods of history[1]*. But the present may perhaps be compared in intensity to the period in the history of philosophy when the Arab or Moslem philosophers sought to assimilate and reassess Greek and Hellenistic philosophy. Many Western intellectuals today, myself among them, are impressed by some of the insights of Oriental psychology and philosophy, and seek to take them into consideration. In my view, however, while being duly receptive, we should not surrender our critical faculty. Monoculture is not the goal – but rather mutual enrichment through debate.*

1. Ungluing the mind

The genius of Oriental psychology! The *Treatise On Sitting Forgetting*[2] recommends us to make the effort that "the mind does not stick to things". According to this view, the ordinary mind needs some content to cling to, to *actualize* at all. Rather than giving thoughts free rein (abdication) or trying to rein them in (suppression), it recommends we repeatedly unglue our minds.

How true this description of mind is! It explains so much of our behavior! Consider how we ordinarily always have some mental content, be it some catchy musical tune, the face of someone one is infatuated with, the memory of some recent conversation, success or vexation, the anticipation of some event or the planning of some action, philosophical reflections or pious prayers, or any kind of thought or mental activity. Tempting random thoughts are constantly offered up to our conscious mind from the subconscious, so as to provide 'fodder' for rumination. Problems (psychological, familial, social, political, etc.) are subconsciously contrived, so as to have a problem to solve, something to think, emote, talk and act over.

We are never quiet, always fixated on or obsessed by some topic, always "mulling and musing". We feel we *need* to fill the mind: whence our enslavement to newspapers and books, radio and television, and other 'entertainments'[3], however tiring or enervating they may be. Sensuousness – whether in the form of sex or masturbation, of drugs or alcohol, of rock or techno music, or of porno, horror or action-packed movies – is also just a way to give content to mind, through more and more sensational sensory stimuli, whether pleasant or painful. Most of us cannot bear to be truly idle and quiescent for one minute, except in lazy sleep. And even then, our pastime consists of dreams. Even the meditation some of us resort to is used (mostly, at first) as just another way to 'occupy' our minds.

Like a pot of boiling soup, with gaseous bubbles rising up to the surface and bursting, the mind's substratum seems constantly excited by sensory inputs, emotions, reminiscences, and more or less voluntary imaginings and verbal thoughts. A memory may at first just appear as a hint, a tempting loose thread; curious, I grab it, and am transported into the depths of the memory. Why did this memory beckon? Very often, by logical or incidental association with a preceding memory or sensation or emotion or imagination or cogitation. Trains of thought are formed, as we become increasingly entangled. Like monkeys swinging from branch to branch, we cling to one item then to a more or less associated item; and thus we wander endlessly through the forest of the mind!

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1 See for instance Yuen-Ting Lai.

2 See *Taoist Meditation*, pp. 84-7. The *Treatise* is "a Tang dynasty text on meditation practice".

3 To the great profit and pleasure of those who provide us with the content. They know that however stupid or false it all is, we are hooked to the drug and will come back for more.

The *Treatise* teaches: to free ourselves from such travail, we have to avoid the mind's tendency to fixate on things. *Our (subconscious or conscious) attention sticks to things, to whatever it finds. When we unglue it from one thing, it automatically finds another to stick to.* It is analogous to a sucker or magnet, which you detach from one thing, and it immediately locks on to another. Thus, one is always 'absorbed' in something, as if terrified of having to face oneself alone. This image of human psychology is very powerful and instructive.

Practicing 'no thought', 'no mind', 'empty-mindedness' does not mean trying to be vacuous and inane all day long – but rather signifies having a light-footed consciousness, one that does not compulsively stick to just-anything merely for the sake of filling the mind, but is intelligently deployed. If awareness is truly required, it is flexibly provided. If there is no real requirement, one can effortlessly return to inner quiet and calm.

Of course, such smart practice implies giving up desires and habits one has long identified with! It is no use just thinking or talking about it; one has to *do* it! "Just say no" to all foolishness. Sitting meditation is a great help, developing the repose we need to see things in perspective and take the necessary steps.

I have found with practice that if, as soon as one awakens in the morning, one resists the mental temptation to '*stir up*' one's mind with extraneous thoughts, and in particular negative thoughts, one finds it easier to rest in serenity (and perhaps good cheer) thereafter, all day long. It is a shortcut: rather than allow scattered thoughts to proliferate, and then have to quiet the mind down later, it is smart to make a small effort of self-control from the start.

Negative thoughts may be stimulated by a diffuse negative feeling, as attempts to understand and rid oneself of such bad feeling; even so, one can resist the temptation to so respond, and give the feeling time to naturally subside. The ego tends to identify with such unpleasant emotion, and uses it as a springboard for thoughts of frustration, hatred, fear or despair, etc. But all these are mere excuses for mental activity, and one is wise to cultivate inner calm and equanimity.

Our ordinary way of confronting the world is very selfish, self-centered or conceited – every thing or event is *related to oneself* in one way or the other. We are affected by each and every presentation. In meditation, after a while, our self becomes transparent – more selfless, indifferent and humble. Sensations, emotions, memories, fantasies and thoughts come and go, but we do not attach ourselves to them, because we do not attach as much importance to them.

2. Abstract *vs.* concrete self

I finally managed to conceive (on a theoretical level, without making personal claims to the direct experience concerned) how the Buddhist idea of 'emptiness' of self (in subjects, and indeed in objects of consciousness) might be convincingly presented and consistently argued, when I read the following passage from ***Patanjali's Yoga Sutra***[4]:

> *"A succession of consiousnesses, generating a vast array of distinctive perceptions, appear to consolidate into one individual consciousness" (IV, 5).*

It occurred to me that the logical demands that every event of consciousness requires a subject (i.e. a soul being conscious) as well as an object (i.e. the content of consciousness), and that every event of volition requires an agent as well as an act, could still be met in the context of 'emptiness' of self, if we assume the schema in Figure 2 below.

[4] This text is available at time of writing at ***www.arlingtoncenter.org***.

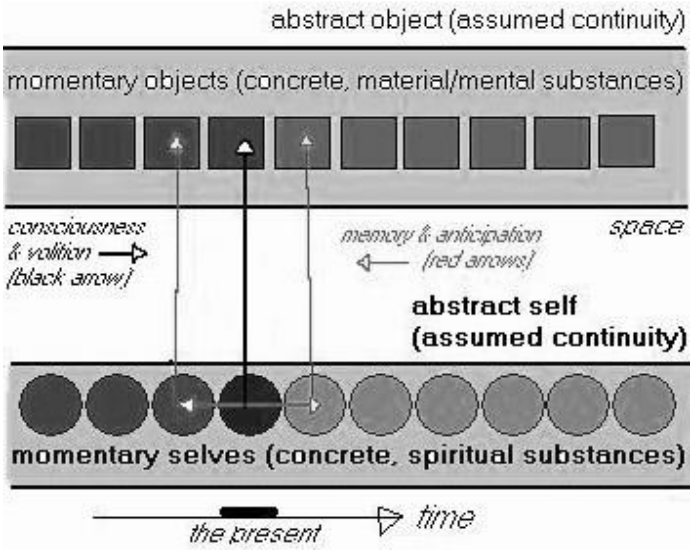

Figure 2. How momentary subjects and objects give rise to abstractions

Note: This is a very rough illustration, to facilitate discussion. The self has no phenomenal qualities in our experience; so, all its spatial features here are merely symbolic. The drawing is not intended to assign a specific shape and size to the concrete or abstract soul (respectively, the successive circles and the virtual tube linking them together), since the self has no extension. Similarly, the space between the subject and object is not to be considered literal, since the self has no location or distance[5]. The black arrow signifies consciousness and volition, probing and changing objects external to the soul; while the red arrows are virtual representations of memory and anticipation reaching the past or future, respectively, through the continuity of the soul or at least the succession of soul moments (more on this further on).

As I have argued in *Buddhist Illogic* and in *Phenomenology*, consciousness has to be understood to signify a subject as well as an object. When something appears, it appears *to* someone. Otherwise, it merely exists – it does not 'appear'. Patanjali seems to agree with the implied objectivist position, when he writes further on:

> *"But the object is not dependent on [people's different] perceptions; if it were, what would happen to it when nobody was looking?" (IV, 16.)*

Granting the existence of a subject of consciousness, and similarly of an agent of volition, – i.e. me in my case, you in yours – the issue arises: how is this entity known? It does not seem to manifest any phenomenal qualities, i.e. it is not perceivable by any of the material senses or in the analogous modes within the mind. Is it only, then, known by conceptual inference from perceived phenomena? No – I have argued in those works – this would not suffice to explain how we routinely experience self-knowledge, i.e. our awareness of our *individual* acts of perception and conception, logical insights, choices and volitions, preferences and feelings.

Therefore, we must have *not just a general theoretical knowledge of the self, but direct access to it time after time*. Since this direct access cannot be subsumed under 'perception' – having no phenomenal evidence to rely on – it must be called by another name, say 'intuition'. Furthermore, since the self, as subject (or as agent), has none of the perceptible qualities of objects (including acts), it should be distinguished from them with regard to substance. Whereas concrete objects (or acts) are labeled 'material' if sensory or 'mental' if imaginary, concrete subjects (or agents) are to be labeled 'spiritual' (souls).

Now, until the above-mentioned insight generated in me by Patanjali's text, I assumed all this to imply that the soul needs be an entity existing continuously for some extended duration of time. In such case, the Buddhist idea

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[5] We roughly locate the self or soul in our body (including head), because it seems at the center of all our sensory experiences (behind the eyes, between the ears, in the nose, under the tongue and the skin), and because our imaginations and verbal thoughts all seem to be going on inside the head.

that the soul is 'empty' of substance could not be conceptually expressed and logically upheld. But now I realize that a compromise position is possible, which reduces the apparent conflict between theoretical construct and alleged mystical experience.

This reconciliation is possible if we clearly distinguish between the intuited *momentary* existence of **concrete soul** from the assumed *continuous* existence of **abstract soul**. The same distinction can be made for the object – i.e. perception only reveals the object's moment by moment concrete existence, whereas the apparent unity between its momentary manifestations is a product of abstraction.

It *suffices*, for logical consistency, that we posit a momentary, concrete spiritual substance being conscious *at that moment* of a momentary, concrete material or mental substance; or likewise *at that moment* willing changes in matter or mind.

With regard to consciousness, the momentary soul may *at the moment of its existence* equally intuit itself, its own acts or tendencies (cognitions, volitions and evaluations), and also *past* moments of soul experiencing objects, self, etc. (insofar as such past is inscribed as memory in the present), as well as *future* such moments (by anticipation, i.e. by present imaginative projection). Similarly, with regard to volition, the momentary soul wills whatever it does at the present moment of its existence, and has no need of past or future moments to do so. All that is intended and hopefully made clear in the above drawing.

Each momentary self exists while in the present, but the next moment it is effectively another momentary self that exists. However, each momentary self, seeing at that moment its *unity of form* with the preceding and following momentary selves, gets the false impression that it is *one* with them, i.e. may identify itself with them as previous and later expressions or parts of itself. Thus, the illusory notion that it is spread over time arises – due to a confusion between the abstract self and the sum of the concrete selves. Similarly, mutadis mutandis, with regard to objects be they mental or material.

According to this viewpoint, we need only assume that traces of the past are carried over into the present through some sort of 'memory' inscribed in successive present concrete subjects or as objects somewhere in their environments. There is thus no logical necessity for us to assume that the different moments are bound together in one continuous *concrete* soul and in continuous concrete objects of consciousness. We can equally regard the apparent unities of subject (or of object) over time to be due to *abstract* commonalties between merely momentary concrete souls (or objects).

This is easy to grasp with reference to *the image of a wave at sea*. As 'it' rolls across the surface of the water, it visually seems like one continuous thing. But upon reflection, we know that the water composing the wave is constantly being replaced by water further on in its course. That is, contrary to appearance, the water constituting the wave does not travel along with the wave, but just bobs up and down. 'The wave' is thus just an abstraction, i.e. a mental projection by us based on perceived repetition of a certain shape over time.

But it should be pointed out that this analogy is not perfect. For, in the case of the wave of water, each successive water-content along the path of the wave exists before the wave passes through it and continues to exist after. Whereas, in the case of a subject or object in time, the present is the only position where existence is actual – the past having ceased to exist and the future being not-yet in existence.

Patanjali, in the initially quoted verse, seems to assume that time is actually divided into discrete 'moments' of some duration. This is apparently contrary to the assumption of modern physicists that time is an infinitely divisible continuum. The following verses seem to confirm that his position is that the continuity is illusory:

> *"The past and future are immanent in an object, existing as different sectors in the same flow of experiential substances" (IV, 12). "Their transformations tend to blur together, imbuing each new object with a quality of substantiality" (IV, 14).*

And further on, more explicitly:

> *"One can see that the flow is actually a series of discrete events, each corresponding to the merest instant of time, in which one form becomes another" (IV, 33).*

But I think it ultimately matters little in the present context whether we assume that time comprises a succession of separate events or a non-stop flow. For we can apply the above illustration and analysis in either case, i.e. whether we assume the series of circles or squares merely contiguous or infinitely overlapping. Perhaps we could explicate the 'moment' of Patanjali as the breadth of time that a given subject's consciousness is able to span in one go. That is, perhaps time is continuous but our consciousness functions subjectively in discrete bits.

The important thing is that we may now accept *two* theses or theoretical constructs relative to the given data.

- One is that of ordinary consciousness, which presumes that underlying the abstract self is a continuous concrete entity (likewise, with regard to an abstract object).
- The other construct is that claimed by Buddhists with reference to deep meditation, namely that no concrete continuity (but only a succession of discrete events) underlies the abstract continuity; i.e. that the apparent continuity is not real but illusory. Or in other words, that the abstract self (or likewise, the abstract object) is 'empty'.

We need not at this stage judge between these two theories. What interests us is that *both are consistent with* the demand that consciousness imply both a subject and an object.

But in either case, the *concrete* soul is *not* 'empty' – there is at least a momentary entity beneath it. In other words, the 'momentary concrete soul' is the common ground of both the ordinary mindset (which however unifies different moments into one 'continuous concrete soul') and the Buddhist claim (which rejects such unification, regarding the apparent continuity as merely abstract).[6]

Note well that no special logical doctrine needs to be conjured to explicate the claim that an abstract concept may not be underlain by a concrete unity. We have an example of this assumption in the ordinary view that a *class* concept or common name refers to a shared characteristic without implying (contrary to the Platonic idea) that it refers to an actual archetype suspended somewhere. This is by way of contrast to the *individual* concept or proper name, which is ordinarily taken to signify that all the objects it groups and labels are manifestations or facets in space and time of a single entity. The following is a more specific example:

If I think of 'myself' in the rougher sense, I include all the sensations felt at various times in different locations in my body, the sight of my skin, the sound of my voice, the thoughts in my head, etc. Although these factors are scattered in time and place, I regard them as 'an individual' called Avi Sion. Furthermore, each slice of my life is somewhat different from the previous: the air in my lungs, the food in my stomach, the blood in my veins, and so forth, are constantly on the move. Likewise, in space: no cross-section of me is comparable; organs differ, I move my arms and legs, etc. Even so, I ordinarily think of me as singular; i.e. the abstraction 'Avi Sion' is in this case considered as referring to a concrete 'sausage' in space-time. Similarly, if I think of another human being or your pet dog or my car.

In contrast, if I think of the 'classes' with the common names 'human beings' or 'dogs' or 'cars', there is no intention (again, except for Platonists) to unify all instances into one big meta-individual. Thus, we commonly readily admit that there are abstract concepts without a single concrete referent, i.e. which merely intend a *similarity* between two or more concrete referents. The Buddhist proposition is simply that this latter understanding is also applicable to the case of 'individuals'.

The discussion becomes more complicated if we more carefully consider the time factor. Firstly, in our above illustration, the arrow symbolizing consciousness and volition is perpendicular to time's arrow; but that implies synchronicity, i.e. that these relations take no time to relate subject and (external) object, or agent and (external) act. It would perhaps be more accurate to suppose a delay, so that consciousness currently observes what is already slightly in the past and volition eventually affects what is still slightly in the future; i.e. we have two diverging arrows. But such supposition is problematic, since the premise of discontinuity is that no intermediate time exists, no being in between the moments shown; i.e. that the present moment is an indivisibly unity.

Secondly, we have too easily assumed that memory and anticipation can somehow function across time, even while considering each moment of time as essentially independent of the previous or next one. The above illustration suggests the pathway of memory to go through cognition of the past when it was present, coupled with a transfer of information from past subject to now present subject. However, here again, with regard to retrospection, it would be inappropriate given the premise of discontinuity to propose that movement of information (communication) occurs from one moment to the next, with time's arrow. Similarly, anticipation cannot be considered as prospective or advance vision of the future itself, and yet when we mentally project a

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[6] In either case, if we wish to support an ultimate monism, we can imagine all instances of subject and object, and the consciousness relating them, as 'bubbles' momentarily popping-up in an underlying unitary substrate of all existence.

prediction (e.g. when willing), we intend it into a not yet existent future; this is even more problematic, seeming to imply movement of information against time's arrow.

In reply to such objections, some Buddhist philosophers would respond that there is no space and so no time delay between subject and object, since both are in one and the same "mind"; or again, that all moments of time are in fact one, being all illusions of that one and only "mind". But less extreme Buddhist theorists would rather emphasize that the discontinuity thesis is not simply that concrete events (of subject or object) are in fact discrete, suggesting a succession of lawlessly spontaneous and unrelated happenings. No, there is still some sort of 'continuity' to take into account. It is the "karmic" component – the idea that each successive event in a series is *causally determined* by the preceding (and all environmental factors).

What this means exactly is open to discussion. It is debatable, for instance, whether freewill is allowed for or fatalism is implied. But more radically, if as Buddhists claim 'everything is causally connected to everything', the concept of causality loses all meaning, *since no distinction between causes and non-causes, or between types and degrees of causality, remains*. In short, while the idea seems plausible if we refer back to the image of a wave of water (where 'energy' – another abstraction, note well – is considered as passed on through the water), we are hard put to find a definition or develop a detailed understanding of causality that would correspond to the Buddhist viewpoint.[7]

Another issue to consider is epistemological. Granting we never experience anything other than the immediate present, i.e. that reminiscences and anticipations are events in the present that suck us in and give us the impression of transporting us into past or future, the question arises how do Buddhists know about karma, i.e. that the present is an effect of the past and the future a consequence of the present? It seems to me that they can only claim an *adductive* legitimacy to their karmic interpretation – in other words, not much more than the epistemological basis of the ordinary assumption of continuous essences and souls! By adductive, I mean given an empirical basis, to postulate a certain extrapolation from it, in the way of a coherent hypothesis to be compared to other hypotheses. That is to say, karmic theory is as much a 'conceptual construct' as the continuity theory it seeks to replace.

The thesis of discontinuity seems less credible to me than that of continuity, because it suggests that the whole universe (irrespective of its nature or size) instantly vanishes and then reemerges, or is destroyed and then recreated, at every moment. This means that instead of having to explain it once, we have to find a new explanation for it in every moment – and of course, we have no time for that in any one moment.

Moreover, we do not only need to explain the repeated *existence* of the universe, but its apparent *similarity* in any one moment to previous moments – for it always seems to contain traces of the past (e.g. footsteps in the snow, paleontological fossils, mental memories or photographic records) comparable to the present (e.g. you look like I remember you).

And finally, of course, comes the more complex issue of *causality*, to explain why similar entities in similar situations appear to behave similarly (*regularity*) and more difficult still, why some individual entities seem variously linked to individual events (*responsibility*). The thesis that there is some continuity across time thus requires less explanation; and being simpler, it is adductively preferable.

Thus, though all we experience of the self and the world is indeed momentary, the hypothesis of continuity remains conceivable and indeed more probable. The *epistemological* fact of transience of all phenomena and intuitions does not per se exclude the *ontological* possibility of certain continuities between them.

It is true that the 'self' especially has only a present existence, and no past or future within the present, since memories and imaginations (including projections of the future) are located outside of the soul, occurring in the mind and being stored in the brain. And indeed, even the soul's present impressions of itself (by intuition), its mind (by inner perception) and its physical body and environment (by sensory perception), are open to considerable doubt, being often very transient and not always clear or memorable.

Also, since the soul has no information on itself or on the outside world within itself, there is some justification to regard past and future as essentially 'illusory', as the Buddhists do[8]. The latter term could be considered as

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[7] I discuss these issues in more detail in my *The Logic of Causation*, chapter 16.3.

[8] The contemplation of this illusoriness is, I believe, called *samapatti*.

somewhat hyperbolic, intending to stress the argument that they are *at best inductive constructs*. 'The past' so-called is constructed from present impressions of the present and apparent present 'memories' of some 'past' – but, judging by verification procedures in the present, the alleged past is *often* more fantasy and self-delusion than a fair estimate of what was. Similarly, and all the more so in the case of 'the future', which not only refers to the apparent past and present, but to incipient intentions of one's own and others' wills (which may or not be finally carried out).

However, such reasonable doubts that can be raised about the present, past and future of the self and its surrounds, cannot be reasonably be taken to an extreme, for the simple reason that that would make the statement of doubt logically self-contradictory. Therefore, we must admit that wherever consciousness occurs, it is based on *some* certainties, which does not necessarily mean total certainty. The inductive constructs that make up most of our 'knowledge' can indeed be erroneous, but it must be admitted (to remain consistent) that they progressively tend to truth.

3. Sundry reflections on the soul and God

The soul is what we regard as the essence of a person, the unitary substance that is both subject of consciousness and agent of volition. This soul need only be present during the life of the physical organism sustaining it, not before or after.

Ontologically, whether the soul is perishable or imperishable does not seem relevant to our study of its cognitive, volitional and evaluative capacities. Epistemologically, how would we know it as a fact either way? If there is no contradiction in either concept, and no evident immediate knowledge of it, we must revert to generalizations and hypotheses to establish it. From a philosophical point of view, the soul may be either short-lived or undying; equally. Some souls may be short-lived to different degrees (animals, humans), some undying (God's at least). There is no law of causality, nor law of knowledge, requiring all subjects or agents to be imperishable or to age equally.

Mortality does seem more empirically justified – in that people and animals evidently are observed to physically die. If the soul is an epiphenomenon of matter, it is probably mortal. Immortality implies literally an eternity of existence, and not merely life after death for some time; this seems a very unlikely hypothesis, unless we refer to the religious thesis that the soul originates in God and eventually merges back into Him, or similar ideas. The issue remains forever (i.e. so long as we exist) open, speculative.[9]

I am not sure Judaism (at its Biblical core, at least) and allied religions ultimately believe in immortality, though they may believe in some transmigration, or at least in the ultimate resurrection of the dead. The 'messianic age' is projected as a period of happy existence for differentiated individuals, rather than as a nirvana wherein all will fuse with God. Just as at some past time, God was alone, so at some future time, He will again be alone: only He (or His Soul, pronoun and noun having one and the same referent) is Eternal. But on the other hand, logically, just as we came from God before we got to Eden, perhaps after the messianic age we shall indeed eventually return to Him.

> The philosophical position concerning the soul adopted in this volume is that it is either directly intuited by itself, or at least implied by its functions of cognition, volition and valuation, some of which are certainly directly intuited (i.e. experienced, although not as concrete phenomena). We could refer this position to the Cartesian "*cogito, ergo sum*" (I think, therefore I am), if we understand the term 'thought' broadly enough, as referring to the three functions. Epistemologically, I infer that I am, due to having experiences, using logic and forming concepts (cognition), intending or doing actions (volition) and

[9] Note that my position concerning knowledge of the existence of God is that we can neither prove nor disprove it; on this topic, see my *Judaic Logic*, chapter 14. My views concerning how we ordinarily arrive at knowledge of the nature of God are expounded in *Phenomenology*, chapter 9. Note that I make no claim that anyone has attained to prophetic knowledge, though I keep an open mind relative to this notion.

expressing preferences (valuation). Ontology reverses this order, acknowledging the self as logically prior to any and all such 'thoughts', as their implied subject or agent.

The notion of a soul no doubt has a history. I do not claim to know it, can only roughly guess at it. The idea of a personal soul is thought by historians to be rather recent – dating apparently from the time humans started burying their dead, or otherwise ritually disposing of them. Much later, philosophers (notably Aristotle[10]) developed the hierarchical distinction between vegetative soul, animal soul and human soul. The first level of soul (involving birth, nutrition, reproduction, growth, decay, death) was found in plants, beasts and humans; the second level (involving locomotion and sensation), only in the latter two; and the third level (involving reason, and exceptional liberty), only in the last.

Buddhism (or at least some currents of it), distinctively, denied the real existence of a soul, considering the 'self' apparently at the center of the individual's consciousness as an illusion[11]. According to the mentalist school (Yogacara), the apparent self is based on eight modes of consciousness – the five due to sensory perceptions; the mental faculty correlating and interpreting them (like the 'common sense' of Aristotle); and two more. The seventh mode (called *manas*) refers to the deluded impression of having a separate self, giving rise to conceit, selfishness, and similar afflictions. The eighth mode (called *citta* or *alayavijnana*) is considered the repository of 'karma', making possible the delays in consequences of actions.

Thus, the 'seventh consciousness' may roughly be equated to the ordinary concept of present soul, although it is declared illusory[12]; and the 'eighth consciousness' may be ultimately compared to the religious concept of a soul that passes on from body to body, although a carryover of potentiality is implied rather than perpetuation of actual existence. This series might be completed by the notion of the 'original ground' or 'causal ground' of consciousness and existence, the Nirvana of one-mind and no-mind – which could be considered as related to our concept of God. Although Buddhists would likely deny it, the analogy seems to be apposite, because it shows the recurrence and uniformity of certain concepts in all human cultures.

Another Indian culture, Hinduism, as well as other peoples and philosophies, consider God more frankly as the Soul of the universe, the common root of all particular souls. In Judaism and sister religions, God is projected as a conscious Presence overseeing (in a cognitive and volitional sense, and in the evaluative sense of lawgiver) the whole world, much as each of us has a soul reigning over his or her own little world. Some suggest, as already mentioned, that our own soul is but a spark[13] out of God's.

Some consider God as transcendent, others as immanent. The latter end up equating God with Nature, in the way of pantheism (Baruch Spinoza comes to mind, here). The human belief in God may have historically developed out of animism, itself probably a generalization of the vague notion of a personal soul.

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10 This distinction was later adopted by Jewish mystics, using the terms *ruach, nefesh and neshamah* (although they seem to interpret them in very divergent ways, however convenient – probably because the terms are not clearly defined, and seemingly interchangeable, in the Bible, from which they are drawn). Similar ideas are found in other cultures, but here again I can only guess the history.

11 Although, if we examine some of the arguments put forward in support of the no-self claim, their illogic is glaring! This is particularly true of the pseudo-reasoning of the foremost philosopher of the Madhyamika school, the Indian Nagarjuna (2nd Cent. CE). To give an example I recently came across in a book by the Dalai Lama (pp. 54-5): "The Vaibhashikas therefore understand final nirvana in terms of the total cessation of the individual. A well-known objection by Nagarjuna… [if so] no one ever attains nirvana, because when nirvana is attained the individual ceases to exist." Nagarjuna is a joker, who likes to play with words (see my *Buddhist Illogic* for many more examples). He here suggests that 'attainment' is only conceivable through alteration (where the subject remains essentially the same, while changing superficially). But it is logically quite conceivable that the individual disappears upon crossing over into nirvana: that would simply be a case of mutation (where the one-time subject becomes something else entirely at a later time). There is nothing absurd in the said Vaibhashika position. (Note incidentally that that position is analogous to the theistic idea of merging back into God, mentioned higher up.)

12 The accusation of illusion is due to their considering the notion of self as a product of conception *from mental and sensory perceptions* (i.e. *dharmas*, phenomena), rather than as I propose as something known by direct self-intuition (i.e. experience with a *non*-phenomenal content).

13 The idea of a 'spark' is drawn from Lurianic kabbalistic philosophy.

Peoples living close to Nature (the Indians of North America, for instance) tended to perceive an *undifferentiated* godliness in all life and indeed in all of nature. Everything had a soul—a bubbling stream or a roaring ocean, a majestically immovable mountain, a pebble rolling downhill, the Sun, the Moon, the vast sky, one day blue, one day grey and rainy, rolling clouds and thunder in the sky, the wind brushing though the forest, a bud flowering, a soaring eagle, a roaming cougar, field mice scattering, a fish jumping up. God was everywhere to be seen and encountered.

Such ideas may have in time become concretized, with the notion of *discrete* "spirits" residing in a stone or tree or river or mountain. Each thing was thought to have consciousness and volition, just as people intuited these powers within themselves (probably long before they named them). People might then seek to talk with bodies of inanimate matter as with animals; for instance, to respectfully ask permission to interact with them in some way. Or they might have to trick or fight them into doing what they wished them to. Eventually, these small, scattered "gods" were taken home or at least represented in stone or wooden idols (as apparently in Africa).

Some gods, like perhaps those of Nordic peoples, may of course have evolved out of historical persons – kings or heroes who were remembered in stories and eventually became larger-than-life myths. Later, as in Greece and Rome, more abstract gods evolved, who represented broad domains of the world (like the heavens or the sea) or of human activity (like love or war).

Eventually, apparently thanks to the Hebrews, *monotheism* was born, i.e. belief in a single and sole universal spiritual God. Founded by the patriarch Abraham, Judaism became a more organized national religion a few centuries later[14]. Eventually, through Christianity and Islam, both much later offshoots of Judaism, abstract monotheism gained ascendancy in large parts of the world. Christianity is closer to Judaism than Islam in some respects, further in others. The former is more explicitly rooted in Judaic textual details, whereas the latter uses them more as a tacit springboard. Christianity retains some concrete ideas and images relative to its founder Jesus, while Islam like Judaism eschews all such deification or representation.

Still today, in India for instance, the pantheon of gods and the ubiquity of images of them is striking. Although Hinduism has also long ago reached the idea of abstract monotheism, it has not made it exclusive. Buddhism, for its part, attained a high level of abstraction, but without personalizing it as God (at least not originally, although many Buddhist offshoots have in practice identified the founder Buddha with God). This is consistent with the Buddhist doctrine that even the human soul is ultimately "empty" of personality. However, Buddhists have remained influenced by ancient idolatry, in view of the statues of Buddha they worship (and thus mentally project 'soul' into, note)[15].

Jewish monotheism is not about God being the Soul of Nature. Nature (*hateva*) is sometimes said to be one of the 'names' of God – but this is taken to mean (e.g. by Maimonides) that Nature is in God's power. In Judaism, God is *absolutely abstract and without any concrete manifestation whatsoever* – no incarnation in human or any other form, and nothing that can be represented by an image. Or more precisely, God is purely spiritual and never material. He is nevertheless the Creator of the world of nature, and remains all-knowing and all-powerful in it. Omniscient – not merely in the sense of knowing generalities (as Aristotle suggested), but also in the sense of knowing every particular; and thus able to exercise providence down to the last detail – as befits omnipotence.

This is analogous to the human soul, which has no phenomenal aspects[16] of its own, although it is capable of knowing and interacting with the phenomenal world. However, the analogy is not total, since Judaism teaches that

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[14] A more concrete 'monotheistic' religion, consisting of worship of the Sun exclusively, appeared briefly in Egypt at about that time. But the question is, who inspired whom? It is certainly equally conceivable that a small foreign contingent (Hebrew slaves) culturally influenced the larger host (some of the Egyptians).

[15] To be fair, it may be that in the minds of some practitioners of meditation, statues and flat images are not objects of worship, but mere aids to achieving the depicted stillness, silence and concentration. One would have to ask individual practitioners what their real intentions are. All the same, it would seem likely that someone starting with imitation in mind, will develop an emotional attachment to the representative object and end up personifying it and bowing down to it. Which, to my mind, is silly, to say the least.

[16] In this respect, Judaism has similarities to Buddhism; although unlike the latter, the former recognizes a non-phenomenal 'spiritual' substance for soul. Another possible analogy is that between the "Ayin" (non-existence, nothingness) of Jewish kabbalah and the "Shunyata" (emptiness) of Buddhism.

the world is not God's body, and moreover that humans did not create their own bodies but God created both their bodies and their souls (Genesis 2:7):

> *"And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."*

So, it is conceivable to Jews that whereas God is eternal, humans are not; and it is also conceivable that God's 'breathing life' into us was animating our bodies with a bit of His eternal Soul.

As these reflections show, the histories of the notion of soul and of that of God are closely intertwined. One of the functions of religion and/or metaphysics is to propose origins for soul and God, and explain how they are known.

Catholic Christians, to varying degrees, use *material* representations of Jesus in their homes, churches and processions. This may historically be an inheritance from the representation and worship of Roman emperors, which was widespread and seemed normal in the world Christianity took over. Protestants, later on and for various (political as well as spiritual) reasons, have for the most part eschewed three-dimensional sculptures and dolls, but they still resort to *mental* representations as well as to two-dimensional pictures. Hinduism and some forms of Buddhism similarly resort to incarnations of numerous divinities, giving them bodily form or thinking of them concretely.

These are *perceptual* ideas about divinity. Judaism, and later on Islam, on the basis of the narratives in their scriptures (the Torah and the Koran, respectively) ascribe perceptible *behavior* to God, in the way of manifest miracles (if only the sending of an angel or a prophetic vision, or the decree of a legal system), but they exclude any physical or mental representation of God, which they reprove as "idolatrous". The idea(s) of God transmitted by their holy books, and later reinforced by interpretative commentaries, are essentially *conceptual*.

As philosophers we might ask: what is the rationale for the worship of statues or other representations? Does the worshipper consider that material (or mental) object itself to be what he or she is worshipping (fetishism), or to contain the divinity aimed at or be an emanation of it or a channel to it – or does the concrete object at hand merely serve as a mnemonic or as an expedient means to focus personal attention on a divinity far beyond it?

One would have to enter people's minds to find out for sure (for their own introspections and oral reports are not necessarily reliable). I would suspect that there is a wide range of attitudes in different people, some imagining a more literal interpretation, others being more conscious of the possible distinctions. The spiritual issue is: does this practice 'weigh down' the soul, preventing it from 'rising' to the formless?[17]

> I should add that I personally suspect that people who believe in some incarnation(s) of God, or in narrow gods or idols, and even atheists or agnostics, *often or at least occasionally* lift their eyes and prayers to the heavens, effectively intending to appeal to or thank God. That is to say, adherence in principle to some non- or not-quite monotheistic doctrine does not exclude the occasional intuition and practice of monotheism. The issue here is not the culturally specific name given to the Deity, or the theoretical constructions usually associated with that name, but the actual intention of the praying soul at the moment concerned. I think all or most humans have that understanding and reaction in common.

Philosophical theism or theology offers no narrative, no stories, concerning God; it is therefore, of course, free of any concrete representations. It consists of frank, changing *speculations* of a general sort, as to whether *in the context of ordinary human cognitive faculties* an abstract God can be definitely known to exist – or for that matter, not to exist.

Extraordinary forms of knowledge (allegedly attained, for instances, through prophecy or meditation) are not inconceivable, but hard to prove to us ordinary people; they therefore remain speculations. Honest philosophers have no prejudice on the subject, and freely admit room for doubt. Nevertheless, they find it possible to formulate consistent theories, which *might* be true about God and soul. On this basis, though no dogma is allowed, various *personal faiths* are possible.

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[17] The essential purpose of idolatry, I would say, is to *imprint* people's minds with alleged representations of gods or God. It is a powerful form of advertising, which produces psychic dependence on the idol, so that it is voluntarily or involuntarily recalled and appealed to in various circumstances. This incidentally benefits the clerical class tending and serving the idol; although, to be fair, the members of that class are rarely hypocritical, but themselves true (indeed, usually truer) believers.

In this way, without imposing any particular religious doctrine, philosophy may yet save the fact of religion from annihilation by pseudo-thinkers. Here, religion is denuded of all extraneous material (that which has made it disreputable), and limited to certain essential propositions given credence through philosophical discourse. The spiritual dimension of human existence is thus confirmed and reaffirmed.

17. Some Topics in Deontology

Deontology is a vast topic, which we can only touch upon in the present volume. I have already made scattered remarks on this subject in previous chapters, and in earlier works[1]; here some additional comments seem worth making.

1. Founding ethics

The term 'deontology' may be taken to refer to the theoretical study and foundation of ethics, without initial preference for any particular ethical system; another term for this is 'meta-ethics'. This philosophical discipline is concerned with the form, rather than the content of ethics – how ethical systems are structured, the logical forms and arguments used in them, how standards or norms might be first established ('axiology'[2]), and indeed all ontological and epistemological issues relative to ethical judgment.

Deontology will, for instance, emphasize that ***the concepts of life, consciousness and volition are central to any ethical claim or system***.

- Ethical discourse can only concern living beings. Inanimate entities (e.g. a table or a molecule) have nothing to lose – for their defining boundaries are fluid and arbitrarily set. We may break a diamond or disintegrate it – but 'it' has lost nothing. Living beings, on the other hand, have things to lose – their limb and life, which may be harmed or destroyed. A microbe is not just a mix of matter; kill it, and the matter remains but it no longer behaves as a living cell.
- Ethical discourse is of no use to unconscious organisms, since they have no way to gain knowledge of it. We do consider that some things are conducive and others are detrimental to plants or microbes – but knowledge of such things concerns us, not the plants or microbes. Such knowledge tells us humans how to cultivate them, presumably so as to eat them or otherwise use them – so it is really a subset of human ethics. Animals can acquire knowledge of sorts, and so may conceivably learn facts or behavior (e.g. from their parents) that protects and furthers their life.
- Ethical discourse presupposes volition. If the conscious organism has no volition, no ethical proposition concerning it is meaningful – since it can do nothing other than whatever it happens to be doing in the circumstances concerned anyway! Ethics is for organisms with freewill, meaning humans and higher animals.

Ultimately, of course, ethics is the prerogative of humans – who are not only alive and conscious and volitional, but moreover able to reason about ethics in general, to formulate and understand particular ethical propositions, and to monitor and manage their own behavior systematically. There is no point researching and writing an ethics, if the subject of it is unable to read it or follow it.

Imperatives, prohibitions, permissions and exemptions – all such statements, whatever their specific contents, logically presuppose an acceptance that the subject has some rationality and free will[3]. It is absurd (self-

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1 See chapters 3.4, 10.3 and 13.2, here; also, chapter 13 in *Judaic Logic*.

2 The term axiology is often used in the wide sense I here give to deontology. I prefer to use the term axiology more specifically with regard to the issue of norm setting, because of its similarity to the word axiom (they both have the same Greek root, 'worth').

3 Immanuel Kant appears to consider that we know of our freedom indirectly from our 'sense of duty' and the logical consideration that duty is only meaningful to a free agent. This is of course nonsense. The sense of freewill is, in my view, far more radical than that of duty. Also, I am not at all sure we have an innate sense of duty – our intuitions of duty are derivatives, not primaries. Even logically, liberty without duty is not something inconceivable; in a sense, we consider God as being free even of duties.

contradictory) to make or imply statements like: "don't refer to the concepts of consciousness or volition in your discourse" – since to say "do not" implies one has awareness and choice.

Of course, volition is (as we have seen) something very hard to fully define and prove, because it is – like consciousness and like feelings – a *primary* object of experience. It is not like something else, to which it might be compared and reduced; it is something *sui generis*, a basic building block of experience. There is no logical basis for excluding volition from the realm of existence, just because it cannot be entirely described in terms of material or mental phenomena. It suffices to point out that it is something we experience distinctively (through 'self-knowledge', 'introspective intuition' or 'apperception' – however we choose to call it). We do not, note well, merely conceive it as a generality – but distinctly experience particular acts of volition within us.

Most human propositions and reasoning about causality are really about volition and allied concepts. Although the world of nature, or causation, is of course of great daily concern to us – we are also all the time greatly involved in thinking about our place in that world and in society, as well as our inner world, and all such thought is essentially to do with volition and allied causal concepts, including ethical concepts.

As we have seen, the ethical modalities (i.e. imperatives, prohibitions, permissions, exemptions) have to do with the realm of the possible. What is impossible in any respect does not belong in the realm of ethics (except to deny responsibility). With reference to any domain we face (nature, society, our own psyche), the following truisms are worth keeping in mind:

- Some things are inevitable; some future events are naturally necessary, no matter what anyone (except perhaps God) does to avoid them. *A contrario*, some things cannot happen, no matter what anyone does in the attempt to make them happen.
- Some things are inevitable (or unfeasible) for some volitional agents, but not so for others. Or they are so at one time, but not another. Or under certain conditions, but not others.
- Some things are bound to happen, *unless* we make a determined effort to prevent them (e.g. a natural disaster, a war or a nervous breakdown). Some things are bound not to happen, *unless* we act in a timely and appropriate manner to make them happen (e.g. a building, a social system or a psychological development).
- To prevent dangers from actualizing, it is usually necessary to be aware that the things concerned are dangerous, preventable, and likely to occur if not acted upon. Similarly, to achieve some positive value, it is usually necessary to identify it as such and to believe in the possibility of achieving it, as well as to acknowledge the need to make an effort to achieve it.

With regard to "freedom of the will", this phrase – as already pointed out – refers more precisely to the freedom of the soul to will, whatever influences to the contrary accumulate. In a Buddhist perspective, where the 'soul' or 'self' is radically denied, we might identify the concept of freedom of the will with that of "the unconditioned" – i.e. it is one's "Buddha nature" that is free, and we only attain true freedom by getting to and abiding in that place within one's psyche.

Otherwise, according to Buddhist psychology, we are greatly moved by "desire". In this context, it would perhaps be well to draw a distinction between "general desire" and "particular desire". The former concept would refer to the emotional base of desire as such, a diffuse substratum without specific object; while the latter concept would refer to the application of general desire to a particular object (e.g. a loved person), often merely on the basis of a random fantasy or other pretext.[4]

Many influences impact on any given act of volition; some facilitate it, others make it more difficult. As we have seen, influences may be outside factors, which condition the volitional act through having been perceived or conceived by the agent. Mental factors of various sorts are also of course often influential to varying degrees. Some influences are simple, short-lived, *ad hoc*; while some seem to be more complex and deeply ingrained. Habits, for instance, are produced and reinforced by repetition. Obsessions and compulsions involve complicated hidden factors, which produce inertias unless certain work is done to overcome them.

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[4] If the felt emotions are sufficiently distinctive, we might subdivide general desire into broad (intermediate) categories such as "lust for sex", "power lust", "greed for food", "greed for money", "yearning for fame", etc. This supposes that not only do we feel vague 'desire' before we desire something specific, but also there is an intermediate stage where general desire first takes shape as vague lust or greed etc. before it focuses on a particular object of lust or greed etc.

We have seen how impulses and urges – be they physical, mental or spiritual – can be reconciled with the fact and concept of freewill. We were particularly concerned to find out why and how some normally volitional aspects of mental life, such as some thought processes, might sometimes give the impression that they occur automatically, indeed against our will. We arrived at the conclusion that such thoughts, although products of consciousness and will, are hard to control instantaneously, just because a greater and more sustained effort of consciousness and will is required to rein them in than to let them loose.

Many actions we label as 'unconscious' or 'involuntary' are really *minimally* conscious or voluntary. Our linguistic habit in that regard should not be allowed to mislead us into erroneous doctrines. When we have an impulse to do something, we may immediately (more or less whimsically) 'follow that impulse' and do the thing concerned – or we may restrain ourselves momentarily, at least long enough to reflect and make a considered decision. The amount of effort put into that reflection determines how (i.e. to what degree) 'conscious' and 'voluntary' is our subsequent action or our further restraint from action. A policy may be instituted for future recurrences of similar choices, or a habit may be programmed by repeating the same decision.

Through such formal analyses of psychological factors, we have (I believe) greatly succeeded in buttressing the concept of volition.

The development of ethical propositions – and eventually an ethical system – constitutes an attempt *to prepare in advance* answers to questions that naturally and inevitably arise in the course of volition. It is a service the ethical philosopher seeks to render to fellow volitional agents[5], just as the logician seeks to facilitate human pursuit of knowledge or the physical scientist seeks to facilitate human interactions with nature.

It is a necessary endeavor, because judgments made in the heat of the moment, under the impact of all sorts of emotional and other influences, are not always as broad-based and accurate as those made 'in the ivory tower'. Sometimes, admittedly, the philosopher on his armchair cannot anticipate all the factors that the agent in the field actually faces. Sometimes, to be sure, it is better to act "intuitively" rather than in a "pondered" manner. But more often than not, it is wise to consider matters with a cool head, and with plenty of time to reflect and take a maximum number of issues into consideration.

But whatever ethics proposes, or whatever this or that ethical theory proposes – and whoever is behind the proposition, oneself or others – *such an ethical proposition is merely one influential factor among others in the act of will*. It does not remove the responsibility of the agent for his action. It is just an influence; the volition remains his own.

Even if one believes the ethics one is following to be of Divine origin (i.e. decreed or inspired by God, and transmitted by some religion) – one remains responsible. The act of faith in that religion is itself a volitional act, for which one is responsible. All subsequent acts performed under the influence of such faith remain acts of free will.

2. Ethics concerns the living, thinking, willing

Ayn Rand wrote somewhere[6], concerning values – "of value to whom and for what?" – implying that the term 'value' does not stand alone, but is relative to certain subjects and to certain standards. This is not a mere grammatical observation, but a logical insight too often ignored.

As we have said, ethics concerns the living, and in particular organisms with consciousness and freewill, who have and make choices – i.e. the thinking and willing. This fact signifies that, whatever content we give to ethics, it must be consistent with these three basic factors – life, cognition and volition. They are necessary conditions for any ethical system. That is, the "to whom" and "for what" aspects of valuing are ultimately one and the same, or they at least intersect considerably. By knowing whom we are concerned with, we know what their needs are.

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[5] Of course, such philosophers must be careful to remain modest, and not imagine they can tell everyone what to do in all circumstances.

[6] *Atlas Shrugged*, p. 939.

The distinction between living and non-living matter is admittedly not easy to make with final precision, so that the materialist perspective on life continues to seem equally if not more credible to many people. They argue that life is a phenomenon essentially like any other in the material world; they define life as a natural outcome of certain combinations of atoms.

They may be right – but the issues remain: how come this complex phenomenon was potential in the building blocks of matter (quarks, or whatever); how come matter evolved after the Big Bang through elementary particles, atoms, molecules, organic molecules, till living cells emerged; and how come the latter in turn gave rise to consciousness and will?

These questions are difficult to formulate, for it is difficult to express the kind of answer that is sought through them. We seem to have descriptive answers (i.e. the process of evolution of matter and life is, let's say, adequately described) – but these answers do not answer those questions. The issue is not, either, epistemological – we do not seek more proof, we do not doubt the descriptive scenario given. Our questions are, rather, why did these potentials exist in the original substance of matter; why would matter take so many different forms, and evolve all the way to life, consciousness and volition? Why did quarks exist and why did they not remain quarks forever? Why are the 'laws of nature' that made them change (whatever these laws be) inherent in them?

Yes, there are questions of sorts – so no one, not even the convinced materialist, can claim to 'know it all'. We have seen how the concept of natural 'conatus', of distinctive quasi-purposiveness in living processes is a legitimate concept, which does not call for special epistemological dispensations, but is formed in regular ways. It implies a sort of striving without consciousness, life relentlessly pursuing more life. Perhaps this abstract observation is the best definition of life we can propose.

The prime standard of natural ethics is bound to be Life, since the phenomenon of life is the core thing that gives meaning to the concept of ethics. That is, of course, a very vague norm, which biology, physiology, psychology, sociology and kindred sciences may clarify and enrich for us, telling us not only what furthers life, but also what gives it its fullest expression. This more precise account would need to refer not only to life – but also to consciousness and volition. *They too* are underlying standards that all ethical theories have to support, since ethics is meaningless without them.

With regard to life, I know that my own readings in biology have greatly affected my understanding of this standard, shifting its sense from a more self-oriented "my life" or "the life of my loved ones", over to a broader interest in "life as such" or "life in general" or "all life".

Beyond the struggle for survival of individuals, groups, species (which is undeniably fundamental), we may discern the struggle for survival of life per se, independent of any particular form or genetic content. In the latter perspective, the various forms of life are but means to the more basic end, that of life as a whole. The diverse forms may struggle against each other, competing for limited resources, using each other as well as minerals as natural resources[7], but ultimately their efforts can be considered as converging to a common goal, the continuation of life as such, in some form or other at least, but better still in as many forms as possible[8].

One might thus argue for the 'unity' of life, as if we speak of one organism that can split up into many smaller interacting entities, yet nevertheless remains one. We, and all animals and all vegetables are not just cousins – we are the same entity. This "Gaia hypothesis" may have some validity and utility. Nonetheless, we can conceive of a hierarchy or pyramid of living organisms, from the simplest to the most complex, at the top of which (at least here on Earth) we seemingly happen to be in numerous or most respects.

Mankind is the species (or perhaps the only remaining species on Earth) with the maximum amount of consciousness and freewill. These powers are found to a lesser degree in other species, but most in us. Even within the human race, there are individual variations, some of which are perhaps inherent to a genetic makeup, while others can be improved on by personal effort. Considering all this as an outcrop of matter at the Big Bang, it is as if matter strove to see and know itself, and volitionally act upon itself, going way beyond the blindness and

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[7] Except for the lowest creatures in the food chain, which feed on minerals only.

[8] It does not follow, of course, that genetic engineering is in the long-term favorable to life. Nor does this doctrine condone having sex with animals!

'natural law' determinism (including, here, the mindless indeterminism of quantum mechanics) of the mineral realm.

These are speculations, of course; but I ramble on because they seem to have some impact on the idea of a universal ethical standard. We should also, in this context, keep in mind the last phases of the biological story – what we call 'history'. After eons of animal evolution, a weird species called humans emerged, and at times seemed the crowning achievement of nature, though now looks more and more like its nemesis. Is evolution collapsing onto itself in a final flurry of fickle frenzy?

And within that framework, we need to consider the history of ideas, and in particular the history of philosophy, to understand the thoughts and behavior of the individual humans we are today. Ideas and philosophies, from a biological viewpoint, are just ways and means people have through history responded to changing environmental, social and psychological challenges. It is a long story of trial and error, in which those who wrote the most or became most famous were not necessarily those who understood the most. Looking back, one is at times amazed at the incompetents philosophy has attracted.

But what is wonderful about philosophy is that even stupid philosophies are useful to the development of philosophy, because they encourage other philosophers to distance themselves from their positions, and explain why. For this reason the history of philosophy is an integral part of philosophy, because each philosophy in it is somewhat delimited by all the others.

3. Conscience and conformism

Most people, perhaps not all, have a functioning *conscience*. What is that? It seems to be a reserved 'part' of us, which we charge with the task of supervising the rest. Of course, granting that the soul has no spatial extension, this description is only a manner of speaking, a mere analogy. One's conscience is no other than one's self behaving in a certain way in time; it is a volitional function, although it may be habitual to various degrees, even obsessive-compulsive. Conscience may thus be 'big' or infinitesimally 'small'.

Conscience essentially means consciousness (in French, the two words are the same) – being aware. The role assigned to conscience by us is to critically oversee our thoughts and actions, and judge whether they fit in with our deepest standards of what is humanly appropriate in given circumstances. This job may be performed consciously, or subconsciously; in the latter case, we can induce the implicit judgments by observing the subject's patterns of behavior. Conscience is thus revelatory of *effective* ethical standards.

> Note that the concept of conscience is also applicable in the more neutral realm of 'ethics of knowledge', where we monitor and regulate our cognitive processes (our intellectual honesty, our will to realism, our efforts of research, the logic of our inferences, and so forth).

We can, by observation of a person's consciousness and volition at work, infer that person's underlying ethical standards. Insofar as most people have common standards, such observations may give rise to a notion of ethics *based on* conscience. However, such a doctrine is hard to uphold, as it seems to involve circularity. Are the deep ethical standards that conscience bases its judgments on innate? That would seem doubtful, although some could be posited as instinctive, i.e. as genetically transmitted emotional influences.

For the most part, however, the norms implied by our conscience are acquired and changeable. For most people, this means mostly reference to the cultural norms of the social group around them, which are largely conventional, though often based on the accumulated wisdom of a society or mankind over time. Some people, to some extent, take a more active part in the formulation of their guiding norms. A person may start with one set of norms, acquired through education or by cultural osmosis, and later acquire a somewhat different set, whether by change of peer group and adoption of a new convention, or through more conscious and rational efforts.

Most people function by *conformism*. In a modern, media-based society, like ours today, this occurs as conformity to stereotypes – for examples, the stereotype of the rebellious youth (who, however, wears the right type of clothing and uses the appropriate language), or the stereotypes of the crusading reporter, tough-guy lawyer or hotshot investment specialist. Conformism makes things easy: one does not have to think too much about what to do – and one is easily classified by others, gaining ready benefits from such identification.

Conformism is nothing new, but found in all societies, throughout history and geography. It is not just a matter of external appearance or behavioral patterns, but controls thought processes. The practice is especially evident in closed religious or political groups. People in such ideological circles are prone to thinking by means of clichés, rather than investigation. They tend to cognitively function by *subsuming people and events under preordained categories*, rather than by developing categorizations inductively. A person or event is forced into a limited number of given labels, with no room for conceptual adaptation.

Even if the natural sciences are essentially neutral with regard to setting ethical standards, in the sense that we do not observe ready-made ones in nature, they still have a constructive function, helping us to identify objective means to our ends. They also play an eliminative role, helping us to get rid of ideologies based on false presuppositions. But of course, granting that the body, in itself or as a vessel for the soul, is important to life, biology is also informative as to what standards are natural. Science is therefore important to deontological efforts.

The Kantian view of 'duty', as something that must be done whatever the human cost[9], ought to be considered in this context; it appears as the notion of a stiff-minded extremist. I should add that, although Rabbis have a similar fundamentalist attitude with regard to certain *mitzvoth* (commandments), they do consider that the law has to be tempered occasionally, to save a person from unnecessary harm or pain. Such avoidance of doctrinal rigidity may be characterized as 'humanism'; it is remembering we are concerned with human beings, not robots.

Also worth noting here is the observation that people sometimes commit sins (according to their standards) almost deliberately, in order to rationalize – even if *ex post facto* – their sufferings as punishment for their sins, preferring this twisted option to the frightening idea that there might be unjustified suffering in the world! This is another instance of ideology, where one tries to force experience into preconceived ideas, instead of remaining cognitively flexible.

Although ethics is built up primarily around the individual, since individuals are the ultimate units of its injunctions and inhibitions, its social aspect should not be underrated. The individual soul has three powers – consciousness (the soul as subject), volition (the soul as agent) and valuation (which gives rise to the emotional life). But additionally, the soul has a social dimension, which is not entirely reducible to the said three powers. This fourth aspect of soul is fundamental to its nature, although hard to pinpoint.

We do not exist as isolated entities, but as part of a social fabric. Why else would people congregate in communities and nations? An unloved baby is as good as dead psychologically, losing intelligence, the ability to communicate, and so on[10]. People need each other, not merely as means but as ends. This is a complex issue that deontology must take pains to integrate.

4. Tai Chi, karma yoga and faith

Doing Tai Chi some years ago, led me to an insight concerning "virtue".

> The Tai Chi form comprises a great number of incremental individual 'positions', which slowly flow into each other, forming whole 'moves', which in turn naturally succeed each other, resulting in a complete 'form'.
>
> No position in or portion of the form is justified by any others, although stringed together they form a consistent and powerful whole.
>
> Each incremental Tai Chi position within a move must be experienced as important in itself, and not merely as a 'way station' en route towards the final position in that move. It is not instrumental, but to be enjoyed and appreciated as it is, without anticipation of its eventual destination or utility. Every

[9] For example, one should not lie to someone just to avoid hurting the person's feelings.

[10] A few years ago, when the Rumanian dictator fell, orphanages were made public, where children were barely cared for at all. They were found to be horribly underdeveloped, mentally and physically. Interestingly, babies closer to the door of a dorm were slightly less affected than those farther away, because they experienced the rare passages of the nurses a bit more often!

> 'intermediate' position is a 'value' or goal in itself, and not merely a 'virtue' in the sense of a means to an end.
>
> The movement from one such position (or one whole move) to the next is also a moment of which we should always be firmly aware. The instant of change, of shifting over into a new position, is also to be felt with great concentration.
>
> By so treasuring every point and transition in the trajectory of Tai Chi, we incidentally maintain its full potential towards an infinity of other moves. We also get a sense of the discontinuity and continuity of time.
>
> A move has little value if one is not intensely conscious of all the segments comprising it. For this reason, Tai Chi is considered a meditation and should be performed as slowly as possible.

Tai Chi illustrates the Stoic principle that "virtue is its own reward"[11]. It teaches us how each virtue is a value, and how the expression of many varied virtues is also a value.

Such a lesson in living may be valuable even at the time of our death.

Rather than be afraid of that great unknown, no matter what form our death takes, we could regard it as a great opportunity! Just as we should go through life contemplating its course with equanimity, viewing the bad as well as the good as a great and interesting show – so, when death arrives, we should meditatively watch it come.

Just think: *your one and only chance* to experience this mysterious event first-hand! It is worthwhile training oneself throughout life to be conscious in all circumstances. Watching oneself die, if only for a moment, one may at last know what death is – or what life is.

Another Oriental discipline that teaches the same concept is "karma yoga". Karma yoga is going about your daily work activities without concern for the advantages they may bring you personally. This is practiced in yoga ashrams and the like; for example, a Zen monk may sweep the courtyard or do a bit of gardening every day.

Many people suffer much in their work life, wondering why they have to perform certain boring routines to earn their living. Karma yoga teaches: enjoy it! Do the job, without involving your ego – without 'selfish motive'. This is of course an idealization, not a call to or justification of amorality or immorality. It merely means: concentrate on the job you have undertaken to do; take one thing at a time, and all tasks eventually get done.

It is important to realize that faith is an essential building block of all ethical systems.

Religions, like Judaism or Buddhism, are ridiculed by some people because of their requirement of 'faith'. Such people argue that in an ethic based entirely on reason and experience, nothing would be assumed worth doing until and unless we *first established* that our proposed actions were bound to or likely to have certain positive consequences considered worth pursuing – whereas in religious ethics, we *cannot* know the truth and value of the goal (God or Nirvana, as the case may be) in advance of ourselves attaining it, and we must also take it for granted that the alleged means (suggested to us by the tradition concerned) lead to that putative goal.

Thus, religious ethics would seem in principle contrary to reason, since their defining characteristic is faith – in both the goal and the means. They are made to appear as a sort of gigantic con game, whereby some future events *inaccessible to* experience or strict inference from experience are forecast (heaven or hell, or similar notions), and we are told (as a revelation or 'witnessing') that we must do this and that, and abstain from doing so and so, to achieve the positive consequences and avoid the negative ones.

But though such arguments have weight, they are not entirely fair and conclusive. In truth, all purposive action involves faith. For our knowledge of the empirical world through reason is essentially an inductive, tentative one. It consists mostly of generalizations and adductive arguments, based on past experience and dependent for confirmation on future experience – which means, ultimately, it is built by trial and error. Most propositions we believe are attempts at truth, which we hope will hold, but which we may need to correct further on.

One may still contend that, whereas secular ethics make relatively small or at least discrete demands, religious systems demand we invest our *whole life* in a purpose whose validity and value may just be figments of someone's imagination, and the efficacy of the means to which is far from evident. But is that fair criticism? Surely, in common pursuits like raising a child or pursuing a career, we invest our whole life in purposes without

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[11] See earlier discussion of this principle, in chapter 10.3.

guarantees of success. Human beings inevitably gamble, whatever their course of action, whatever the way of life they choose.

So, the demand of faith by religious ethics should not be viewed as a determining argument in favor of secular ethics. Concerning religion, Pascal's Wager comes into play; for those who totally reject religion, there are still great uncertainties to cope with. Thus, the deontologist must keep an open mind, neither rejecting religion offhand, nor (of course) naïvely accepting its claims.

I have elsewhere[12] attacked the principle of karma, dear to Indian philosophy, pointing out the epistemological difficulties involved (for us ordinary mortals) in establishing alleged karmic relations. Similar objections can be raised with regard to claims of Divine reward or punishment: how could such claims be proved? But here I wish to point out how even secular ethical principles are often based on mere suppositions, and do not for all that lose of their power.

If I claim, in accord with karmic law, that it is best for me not to do some deed harmful to others, because the same *will* surely happen to me if I do so – I am involved in a circular argument of sorts. I can claim this as a generalization from past bitter experience, but that generalization will not be tested in the particular case at hand if I believe in it and abstain from the deed, and so it will somewhat paradoxically remain forever unempirical!

On the other hand, it would suffice for me to claim more hypothetically that if a similar harmful deed were done to me, as it well might, I could not then consistently complain that I was a victim of some cruelty and injustice, having allowed myself to do the same. In this way, the benefits of karmic principle can be maintained – the consciousness of reciprocity – without having to prove actual causal connections.

Another example: I can pursue the Buddhist ideal of 'cessation of desire, so as to avoid rebirth', *just in case* there is such a thing as rebirth and *on the supposition that* it is caused by desire. Although these assumptions are unproved, and we cannot even imagine how they might ever be proved, they may still legitimately be used as working hypotheses. Similarly, one might argue: *in case* God exists and gave man the Torah, I had better act thus and thus. I have to do something, so it might as well be that.

In other words, behavior *need not be based on certainties*, which are anyway rarely if ever available, but can be based on frankly *conditional judgments*. The conditioning involved may have any mode – not only the natural mode, but also the extensional and the logical modes. Since human knowledge is inevitably limited, it is largely uncertain to some degree. Nevertheless, life cannot be blocked by this truth; volition still needs guidance. Therefore, action based on hypothetical reasoning has ethical validity.

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[12] See *Buddhist Illogic*, chapter 9.

18. More Topics in Deontology

1. Inducing ethics

How is ethics actually built up in people's minds, and how is it to be justified epistemologically? My proposed answer to these questions is as follows.

We all have our own 'intuitions' of right and wrong, good and bad, just and unjust, kind and unkind, etc. Some of these are primary – arbitrary valuations of the free agent. Others are basically emotional, sentimental or sensual. Others are derived from conceptual insights, based on accumulated ideas and values of which we may be more or less conscious, and which we may have more or less justified. At this stage, we need only consider them all as notions, as mere phenomena, at their face value – without regard as to their sources, structure, consistency or validity.

Taken one by one, in isolation from other such valuation experiences and from knowledge as a whole, these intuitions may, of course, be real or illusory. They are not necessarily 'correct' or 'justified' just by virtue of their occurrence, nor of course automatically invalidated by the fact that they as yet have not been established as true and valid. This is analogous to my treatment[1] of appearances in general as neutral, before we start classifying them as realities or illusions.

Thus, initially, these intuitions of value or disvalue are acknowledged to have some small credibility just by virtue of appearing, but not enough of it to decide whether they are ultimately reliable or not. But, through an inductive procedure that treats these individual insights of right and wrong as *hypothetical raw data*, and then faces them off with all other data, *comparing and contrasting* these value-insights to each other, and with the wider context of non-evaluative knowledge, we manage to gradually build up a consistent structure that includes some of them and excludes others.

From this ordering process, emerge the modalities of ethical propositions (must, may and may not, cannot). Using syllogistic and factorial techniques similar to those used with non-ethical propositions[2], ethical insights are statistically ordered, collectively yielding ethical systems. By 'statistical', here, I mean 'for *all, most, some, few, no* other valuations (as the case may be), this one is compatible or incompatible, implied or not-implied'. Thus, I suggest, ethical logic is constructed in much the same way as logic in general is.

Note that ethical propositions do not only have categorical form, like "X must do Y". Some have conditional form, like "if Z occurs, X must do Y – but if Z does not occur, X need not do Y". The former are applicable under general conditions, whereas the latter under particular conditions; but apart from that difference, their force of "imperativeness" is the same.

My theory is, therefore, similarly intuitionist. This is not, however, a relativistic position, at all. Some ethics are more reliable than others. What distinguishes the ethical systems of different people at different times is, simply, the clarity and amount of ethical and non-ethical intuitions that have been taken into account, and the logical rigor with which each of us orders this raw data into a consistent whole. People with confused minds are drawn hither and thither by their feelings and notions, and fail to evolve a trustworthy ethic. Others are more careful, and produce a sounder end product.

Thus, the right-wrong or good-bad experiences at the ground of ethics are technically akin to the true-false or correct-incorrect experiences at the ground of non-ethical knowledge. The procedure for judging them is the same: we grant them some *ab initio* credibility, but reserve our final judgment till further research has confirmed them in all respects (until and unless new evidence or arguments emerge to the contrary). Thus, in effect, value-

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1 See *Future Logic*, chapter 2.

2 Non-ethical propositions have been labeled 'alethic'. Regarding 'factorial' analysis, see *Future Logic*, Part VI.

intuitions are treated as empirical data; this gives them some weight, but does not in itself constitute full justification, which requires a longer and more holistic process of review.

As raw data, ethical intuitions are not only comparable to sensible qualities like colors or feelings, but also to logical insights. By this, I suggest that, *given the very same level of intelligence and information, two people in similar circumstances would theoretically have the same ethical intuitions*. Granting this bold assumption, we acknowledge a certain 'objectivity' to ethical judgment. Of course, this assumption cannot be definitely proved by experiment, since in practice we cannot hope to make two people – or even the same person at different times – sufficiently the same.

This hypothesis allows us to develop ethical concepts from the ethical notions, in the same way as in general discourse the logical modalities are constructed from apparent logical insights of identity, contradiction, compatibility or implication – by recourse to factorial analysis and factor selection. We revert to adductive methods – trial and error, the elimination of doubtful data, till what we are left with seems reasonably well tested and confirmed.

The leftover ethical judgments are then logically ordered relative to each other, as goals and means, so that the list of *final ends* is reduced to a minimum, which implicitly contains all subsidiary values. This is the *teleological* stage of the proceedings. These final ends constitute the 'standards of value' for the particular subject (man or woman) who has concluded them.

Of course, these standards are to some extent in constant flux, changing with new life experiences, reflections, incoming information, and under the influence of other people. Some aspects of people's value systems remain firmly anchored in them, to the degree that they personally identify with them. Some values diminish or lose their importance in time; others acquire or increase in importance later on. Note well that we are speaking here of *seeming values*, i.e. of the appearance of value to some particular person at some particular time.

There may thus be divergences of opinion among people's values, even though they live in the same milieu. Inversely, many people in a community or historical period may have the same values, so that these *common values* appear to them immutable and objective.

Thus, ethical logic, like the logic of non-ethical knowledge, should be viewed as an inductive enterprise. It is not a deductive system, wherein we are at the outset given, in one way or another, a set of "top moral principles" from which all moral judgments are syllogistically inferred, as many moral philosophers propose. Ethics is not casuistry, based on more or less agreed, arbitrary "axioms" (so-called). Rather, we gradually evolve standards of value over time: they are our short list of most impressive and important looking moral insights.

These norms (or "highest goods") may, once arrived at, be used *in the way of* axioms, but they remain open to review and verification at all times, in recognition of the fact that they were originally products of induction. Although many of us tend to enshrine certain norms, and insist on their eternity, such rigidity is neither justified nor necessary. A norm carries more conviction if it is felt sufficiently confident to face and withstand challenges, than if we block all reconsideration.

Nevertheless, some norms are logically very secure, if not immovable. This refers to the norms that fit the general teleological argument: "*whatever your particular values, you must still refer to so and so (the secure norm) as a supreme value, because it is a precondition to the pursuit of any values whatsoever"*. We can in this way argue that life, body, cognitive faculties, awareness, volitional faculties, liberty, health, sanity, and so forth, are all preconditions that any value system we propose has to accept.

Although, note well, such basic values do not by themselves make possible an answer to all ethical questions – they nevertheless provide a framework for all other values.

This is comparable to the role played by the laws of thought, and indeed by logic in general, within knowledge. These top principles or axioms are self-evident, because they are implied even by propositions that attempt to deny them. Nevertheless, it does not follow that logic by itself allows us to deduce the world without reliance on experience. We must still largely depend on experience. Logic just helps us to make sense of that experience.

> In the domain of values, some values act as *sine qua non* conditions for all other values. Since all values are to some extent relative to these values, they may be considered as effectively absolute values. If we can argue of some value Y that "**whether you value X or you value notX, you must still pursue or retain Y and/or avoid or remove notY**" – Y is established as such a precondition. Note that X and notX

are presumed values, and not merely indifferent objects. This is essentially dilemmatic argument, similar to that used in general logic to establish necessary propositions.

It is an aspect of teleological reasoning, which (as already said) investigates ways and means to intuited values, in the light of natural and artificial tools and obstacles available. Teleological reasoning refers to the natural and extensional modes of modality, rather than to the logical mode. It makes consistency checks between our different goals, and places them in hierarchies and priorities. It seeks out the most effective means to these goals, considering all surrounding conditions and time factors. The use of such reasoning should not be taken to imply an essentially utilitarian or epicurean view of value systems.

People often declare "happiness", or some particular version of it, as their ultimate goal. But most people would find it difficult to say just what they mean by happiness – is it fulfillment of one's major goals, a positive emotion or a maximum of pleasures? Paradoxically, Buddhism suggests, the active *pursuit* of happiness is not likely to result in happiness. In any case, such "eudemonism" is not a sine qua non of all values, and so not an absolute value. That is, we can in fact live without happiness, and most of us do. Nevertheless, we would naturally prefer to feel good than feel bad; and, within limits, this is often possible if one lives virtuously. Dignity and decency beget a measure of contentment.

Note lastly this important remark. Though we have value intuitions, and however these intuitions arise, we are *never forced* to act in accord with them. We (men and women) remain at all times free agents, who are responsible for their final choices. Even when we develop a complex ethical system, we remain free to act or not act in accord with our beliefs. We may ignore them or even act against them. Our beliefs have causal power as influences, but no more. This is freedom of the will, without which no ethic can be claimed.

2. Ethical formulas

Ethics and law systems can, at least partially, be built on certain logical considerations.

People often say "don't be so judgmental", and "live and let live!" – or they may sneer , implying contempt for such idiocy. This is presented as an argument against ethical distinctions, an attempt to generally invalidate ethics by claiming all moral judgment to be relative and uncertain. However, the proponents of this thesis fail to realize that it is logically inconsistent, since it is itself composed of judgments.

To say: "*don't* judge" or "*do* let live", or otherwise imply it is wrong to judge, is to propose the paradoxical ethical proposition "one should not make ethical propositions" – which is *self-contradictory*. It logically follows that the opposite position is true, namely that "it is indeed permissible to make ethical propositions".

In this way, we have definitely proved, as logically self-evident, the existence and demonstrability of some ethical propositions. We have established an axiom for deontology. Those who say "be tolerant" (towards just anything) are effectively making an uncompromising, intolerant statement – therefore, they cannot be right, by their own terms.

Such arguments are not rhetorical tricks – they clarify the way things are, by virtue of our having consciousness and volition, and being able to engage in discourse and argument. Concepts of ethical moment naturally evolve from our experience of the world and interaction with it. They are not arbitrary constructs, which can be manipulated at will. Once evolved, they have a logic – of which we must be aware and which we must respect.

Many moral judgments, and indeed many laws, are based on **the principle of reciprocity**: "do not do unto others as you would not have them do unto you"[3]. This is an ethical formula most people would

[3] In the Jewish tradition, this adage is first found in the Talmud (Shabbat 31a), in the form "what you hate, do not do to your friend", as an interpretation by the sage Hillel of the Torah commandment "love your neighbor as yourself" (Leviticus 19:18). Note that the form he gives it is negative; it is a minimalist call to forbear from causing harm, rather than an injunction to do good (which is covered more specifically through many other commandments). In the Buddhist tradition, it is similarly taught that we will act humanely towards others if we remember that all sentient beings have, like ourselves, a natural desire to be happy and not suffer. This, too, is an appeal to reciprocity.

intuitively accept, even if they might disagree as to what they or others would or wouldn't want done to them.

When a murderer kills, or tries to kill, he tacitly, by the implication of his act, claims the right to kill. Since he is, in fact, no different from his human victim, he thereby grants to others the right to kill *him*, at least in self-defense, if not punitively. He cannot consistently argue that he has the right to kill others, but others do not have the right to kill him.

> ***Ethics takes every claim as a universal principle, unless good arguments can be adduced to particularize it***[4]. One cannot exempt oneself from the imperatives one gives others, or permit oneself what one has prohibited to others, unless some very convincing distinction between self and others is offered (for example, that the others belong to a different species). It is reasonable to assume that particular moral claims derive from general principles.

This is one application of the reciprocity principle, on the basis of which we grant the state the right to execute murderers, to keep the peace. Some people argue that the death sentence is not necessary or useful, and many countries have abolished this extreme penalty, but that is not my concern here. I am not arguing that issue one way or the other, but am only trying to clarify our reasoning with regard to reciprocity.

Note, in any case, that society's killing of the murderer is very different from the murderer's killing of some innocent victim. The murderer has initiated violence; the state merely retaliates. When society avenges the victim and punishes the culprit, protecting society from further injury, there is no basis for further retaliation against the executioner or those who appointed him. All that, of course, is said on the theoretical assumption that there has been due process, under just laws, beyond a reasonable doubt, and so forth. In practice, these caveats are admittedly often inadequately respected.

A similar argument can be constructed with regard to theft. When a thief steals, he thereby ignores or denies the existence of private property, and therefore cannot be indignant if others (in practice through the state) impound his property or fine him. If he is indigent, he may be imprisoned on the argument that this deprives him of the liberty to enrich himself, and incidentally, prevents him from further theft. Here again, justice is served through the logic of reciprocation.

We often argue: "if everyone did this (or didn't do that), everything would be fantastic (or everything would be terrible)", but such general arguments are ***idealistic***, since in practice it is improbable if not impossible that literally *everyone* will do (or not do) some one thing in concert; there are always recalcitrants!

A person could well argue that he is willing to live in a world where everyone can do as they please: he is willing to take the risk involved. We cannot argue against such an anarchist that he too might get hurt, since he is gambling he won't. Our argument is circular and impractical.

It follows that such a person will not be convinced by any rational arguments not to kill or steal, but must be overpowered by society into compliance with the law. The reciprocity principle as here used is not abstract ethics, but a justification for concrete force.

It should be stressed, in this context, that many crimes have not only certain direct and obvious effects on a particular victim, but also much wider and more insidious consequences on society as a whole. ***Every crime – insofar as people are victims to it, witness it or hear about it – causes people to lose some of their natural trust in other people.***

When a murderer kills, people begin to fear someone might kill them. When a thief steals, people have to hide their money and lock their doors. When a rapist rapes, women begin to fear men in general. When a schoolteacher abuses a pupil, all educators become suspect. And so forth, with every criminal act – and this principle is all the more true nowadays, when the media give wide and loud coverage to the more heinous crimes.

This, then, is the further crime of every criminal – he decreases people's trust in each other. Suspicion grows, and everyone's freedom is curtailed. 'Potential victims' (i.e. anyone in any way resembling past victims of the crime concerned) must take protective measures, and 'potential criminals' (i.e. anyone with any resemblance, however

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[4] Note well the differences between this principle, and Kant's famous maxim. I am not stating that the mere possibility of generalization establishes ethical rules; and I am making allowance for the particularization of such rules.

remote, to actual criminals) must limit their movements. Society thus loses its cohesion, and everyone becomes a little less happy. In some cases, relations between people become aggressive.

Some of the reasoning involved in this distancing between people is, of course, logically unjustified. If a news bulletin is about a husband killing his wife for her money, other rich wives may come to imagine that their own husband could well do the same. If the news is that a boss raped his secretary, many secretaries will the next day look at their bosses with a bit of concern. The categories 'husband' and 'rich wife', or 'boss' and 'secretary', are enough to generate some analogy, and sow a doubt, *even if the psychological and other conditions involved are totally different*.

Statistics are sometimes read, or misread, in ways that reinforce such reasoning. If a number thieves are foreigners, all foreign-looking people become 'probable' thieves in people's eyes, even if the proportion of thieves among foreigners is less than that among locals; the actual degree of probability involved becomes irrelevant in people's minds. (For example: suppose 20% of population are foreigners and 10% of population are thieves, it may be that only 5% of foreigners are thieves, in which case 11.25% of locals are thieves!)

People also wrongly convert propositions, thinking that "all X are Y" implies "all Y are X". For example, 'all rapists are men' becomes 'every man I meet could be a rapist' in some women's minds, and they behave as if he is so. Absurd it might be, but people are human.

Society is thus a *collective* victim of every crime, and it is proper for the state (as the instrument of society) to vigorously intervene, and prevent, repress and punish crime.

In all such negative situations, the principle of reciprocity is used to hinder, limit or repair the damage caused to other people or society as a whole by some individuals or groups. It should be stressed, however, that in most situations, the principle of reciprocity plays a much gentler role in people's minds, encouraging mutual respect and trust. This occurs when the persons concerned reflect *before* committing a wrongdoing, thinking: "I would not like that done to me, so I will not do it to others" or "I shall not behave in this way, so as not to spoil our world even more" or the like.

Some people do go one step further, and apply a positive version of the reciprocity principle, thinking: "if I was in this difficult situation, I would hope or expect others to come to my aid, therefore I will offer my help". This is an admirable attitude. Of course, those to whom help is offered may not want help, or not that particular kind of help, or at least not the way it is offered. One cannot stuff it down their throat. For this reason, the positive version of the principle is less easy to formulate: *the recipient(s) of our attentions must be a willing party to the transaction*. Still, it often does come into play, promoting tolerance, friendship and even love. This, in turn, increases social bonds and makes everyone's life that much easier.

3. Philosophy of law

Ethics naturally arises first of all within the individual, in the sense that he or she may have certain imperatives, inhibitions or liberties. Ethics as a social phenomenon presumably arose in the family, as the head of household (on the basis of his or her personal ethic) gave advice or orders and was obeyed (whether out of love or fear). More broadly, the surrounding community would have traditions and rules to be respected, as well as advice or orders from the leadership, whoever that included, to maintain social bonds. Eventually, the local shaman or other religious figure gave instructions, in the name of the deity or deities of the group. As these informal social ethics became more formal institutions, the concept of law emerged.

What I wish to discuss here is the distinction between ethical principle and legality, so as to stress that *making something legal doesn't make it moral; making something illegal doesn't make it immoral.*

A distinction that people seem to often find confusing is that between ethical and political law. People generally do understand that the laws currently on a nation's statute books (here referred to as 'political' laws, meaning that they are enacted and enforced by the body politic, though they may concern any matter) are not necessarily moral in content; but they also generally consider that what such laws allow is ultimately permissible and what they forbid is best avoided.

For this reason, society may in some cases interdict practices that its proponents claim harmless, being "private acts between consenting adults" – on the basis that such acts nevertheless indirectly affect people who are not

directly a party to them. For example, homosexuality can reasonably be made illegal on the grounds that making it legal gives some youths the impression that it is moral, causing such behavior to spread, to the consternation and against the will of a great many citizens (including very many parents), so that it is no longer a private affair but an issue of public policy.[5]

Let us briefly consider the concepts involved. Ideally, an absolute ethics would be derived from wise and informed consideration of human nature and of man's place in the world. Armed with such general moral guidelines, each well-meaning human being would in principle be able to know right from wrong in each particular situation facing him or her, and would exercise will accordingly. There would be no need for laws enforced by society.

Practically, such a utopian scenario can only lead to social havoc. Even in a society filled with good will, people have different ideas as to what is right or wrong, and absolute proofs are hard to find. All the more so, since humans have free will, and many of them – under various influences – often opt for what they (themselves) consider bad, rather than (as logic would dictate) do the good. Conflicts thus inevitably arise, which are ultimately to the disadvantage of all. For these reasons, it is generally agreed that some minimal common standards have to be conventionally imposed by the majority or an empowered minority.

We accordingly constitute states, governments, legislatures, judiciaries and police forces, which together make and enforce laws. A guiding principle in enacting and enforcing such laws would be that "the rights of one person end where those of other people begin". Another useful adage is "do not do unto others what you would not have them do unto you". But clearly, such statements do not provide us with an exact science. It is not always easy to decide what needs legislating and what is best left alone. Political science is a changing, empirical discipline.

In this corrected perspective, ethical law covers all human action, while political law covers only some of it. The former is ideally universal; but only a fraction or subset of it is politically enacted and enforced, the rest being the responsibility of the individual to discover or at least practice.

The scope of such political law is vast, but not as vast as the scope of moral law. It includes criminal law (against murder, theft, etc.), civil law (about marriage, inheritance, etc.), commercial law (concerning property, contracts, etc.), and indeed any legal issue that may arise in the interactions between human beings.

Theoretically, at least, the purpose of such laws is to ensure social peace, the common weal, personal security, justice, and so forth – although in practice, as everyone knows, they are often instruments of exploitation and unjust. In principle, what makes them stand out from the mass of ethical laws is the need to reduce frictions between people to a reasonable minimum. Historically, such minimalism has not always been accepted; some societies have been totalitarian, attempting to control almost everything.

In practice, for epistemological reasons already stated, the domains of ethics and political law are bound to somewhat drift apart, so that although the two domains intersect to some extent, the political domain is not wholly contained within the ethical domain, but partly falls outside it. Laws enacted by society, whether by democratic means or otherwise, may differ from the laws suggested by personal conscience or by reasoned study and debate by ethical philosophers.

Such divergence is in some cases reasonable; but it is often irrational. In a non-democratic system of government, the prejudices of the governing few are imposed on the majority, without room for argument. In a democracy, where in principle rational argument is the rule, *pressure groups* occasionally manage to format laws that accord with their aberrant views simply by virtue of the power of their numbers or through other considerations that force politicians to submit to their will. In recent decades, many activities traditionally judged as immoral have been declared legal in Western countries.

Now, let me say that this is not a political tract[6]; I do not expect anything I say or do is likely to stem that unfortunate tide. My philosophy of history is very skeptical. *In each generation, some faulty belief held by large*

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[5] Even if the practitioners did nothing to promote their practice, their mere negative *influence* on society would be sufficient reason to prohibit it; how much more so, if they make efforts to propagate it.

[6] I generally avoid getting into political comment or debate in my writings, because my philosophical aims are at a deeper level of epistemology and ontology. Controversy is bound to alienate some readers, who might consider some of my views as either too 'liberal' or too 'conservative'.

segments of the public comes to the fore and gains ascendancy, until it is brought to its natural absurd conclusion, like a sore spot bursting and releasing its pus, and disaster strikes, so that enough people learn to avoid that particular folly thenceforth.

Nazism and Communism were typical examples: they arrived on the scene of history to the sound of popular cheers, and left in the midst of countless tears. People in Europe learned certain lessons, about the active use of brute force, about persecution of racial minorities, about national and class hatreds, and so forth; they changed their ways somewhat thereafter. They might have saved themselves the trouble and the pain, if they had resorted to reason, instead of yielding to their lowest emotions.

Remember that Hitler was democratically elected (more or less). Realistically, democracy is without doubt the best and fairest system of government available to us; but as we all know, it is not perfect. The fact that certain legislation is passed is not proof of popular support, let alone right[7]. Most laws are based on indirect democracy; the legislators and judges involved in the matter may well be cowardly, amoral or personally compromised. If referenda were used, the results might well have been very different. But even in the case of laws established by direct democracy, *numbers of votes do not determine what is right or wrong*.

From this reflection it follows that the fact that some laws on the statute books socially-politically prescribe, allow or forbid some behavior pattern, does not mean that the behavior pattern in question is ethically-morally prescribed, allowed or forbidden, respectively. What society happens to have favored (or forbidden) may nevertheless, from the point of view of ethics, be wrong (or right, respectively). The arguments involved may have been fallacious or based on inadequate information.

'Legal' and 'moral' must be understood to be distinct, separate categories, although conceptually they are partly related (as we have explicated). Making something legal doesn't make it moral; making something illegal doesn't make it immoral. Youths should especially be made aware of this important distinction.

The individual may not reasonably regard the existence of certain legal tendencies in the statute books as indicative of ethical truth, because legislation is not exclusively based on rational reflection, but depends on social *forces*. The legislator may be faulted for misguiding fellow citizens, but these remain responsible for their own acts.

The individual is still required to think for himself or herself, and to at least consider the ethical advice of the wise doctrines that humanity has produced. The existence of political freedoms or limits does not exempt an individual from moral responsibility for his or her choices. Legislation is not a substitute for conscience, or a just alibi for moral abdication. Although a legal threat or protection can mitigate moral responsibility, it does not absolve.

From an ethical point of view, laws are just one influential factor among others in behavior, which in certain cases it may be wise to volitionally dismiss or oppose.

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[7] All the more, the support of major media means nothing.

Appendices and References

1. Some formal logic guidelines

We have in the course of the present work introduced a great number of propositional forms, such as "A wills W", "X influences A to will W", and many more. In some cases, we have been content to broadly define a causal relation without further treatment. In others, we have gone into more detail, preparing the ground for eventual logical treatment. But the present work (unlike the author's previous works) has not attempted to systematically develop the logic of the various forms introduced in it. This policy was adopted for two reasons: one, to make the text more readable and widely accessible; and two, because the task of formalization is enormous.

This daunting task is left to future logicians. Nevertheless, we shall here make some hopefully helpful comments, in addition to those made in passing throughout the main text. It is always useful to start with a *nomenclature*. Thus, we have called forms about volition: "volitional propositions", and forms about influence: "influential propositions". We may similarly name other forms, like those about velleity or habits or urges.

Next, we must clearly *formulate* each form, using symbolic variables for the terms (X, Y, Z or the like). The form concerned should then be *analyzed* into simpler ones, already studied by logicians. I call the larger form a 'bulk' form and those it is composed of or reducible to its 'pieces'; for example, briefly, "X influences A to will W" implies "A willing W requires less effort with cognition of X than without it" among others. The implied form may in turn be reducible; e.g. the form just mentioned may be reworded with the hypotheticals "if X (is cognized while A wills W), then effort E(X) is required (for willing W)" and "if notX, then effort E(notX)", and the comparative "effort E(X) is less than effort E(notX)".

The forms thus progressively clarified then need to be systematically studied, if we are to develop a thorough formal logic for them. This means *interrelating* all the forms of the same family (validating eductions and oppositions), and considering their concatenations (validating syllogisms and other arguments), as regards deductive logic, as well as dealing with inductive ways and means. This is a big job, requiring much patience, which is likely to yield some tasty fruits. Ultimately, forms *of different families* must also be logically compared and combined; for example, volitional and influential forms. In this way, the logician prepares for all eventual discourse using all possible forms.

Any attempt to develop a thorough formal logic must take non-formal nuances into consideration; otherwise, the treatment will be naïve and ultimately misleading. Many logicians err, because they are too quick getting involved in purely technical issues, before they have sufficiently studied the matter at hand. As I have often argued, excessively 'symbolic' logic is pretty well bound to fall into this trap. Better to stick with ordinary language, although it is more bulky to deal with, because one can more easily spot if one is straying from reality.

For example, again briefly: consider the four forms below, willing and its negation, or activity and passivity.

(a) "A wills W" – this refers to an active will of W by agent A.
(b) "A wills notW" – this refers to an active will of notW by agent A.
(c) "A does not will W" – here A minimally does nothing with regard to W.
(d) "A does not will notW" – here A minimally does nothing with regard to notW.

These forms are in a standard 'square of opposition', assuming that agent A cannot at once will W and will notW – so that (a) and (b) are contrary. Clearly, (c) and (d) are intended as the formal contradictories of (a) and (b), respectively. It follows that (c) and (d) are subcontrary. When both are true, agent A is can

truly be said to be passive. But if (c) is true without (d), then A is active in (b). Similarly, (d) may be true without (c), by implication from (a).

However, it could be argued that (a) and (b) are in fact *compatible*, although an agent cannot *achieve* contradictory goals simultaneously, since he can *pursue* both at one and the same time, provided the respective *partial* causatives of the two results that he wills into motion at the time concerned are compatible with each other (as sometimes happens). In such case, the square of opposition between the four forms is more dilute: the diagonals still relate contradictories, but the four lateral relations are 'unconnected'.

We can further complicate the formal issues, if we more closely consider what we mean by "willing". On the surface, "A wills W" suggests direct will, so that A has but to will in the direction of W and W is brought about. But most objects of will are not attainable at will – A may desire to attain W, and he may do what he thinks is useful to such end, and he may do his best, yet he may be wrong in his assumptions, and his best may not be good enough, and he may end up unsuccessful, or (if W is divisible) only partly successful. Of course, A may try again; but in some cases, W may no longer be attainable, and the opportunity may be lost.

If A wills W and succeeds, then at that moment notW ceases to be. If A wills W and fails, then presumably notW continues to be – although it may be that W is brought into being by some causative or a volitional agent *other than* A, provided that W is not something *within* A but further out, granting that as a free agent only A can affect what goes on within himself. (Similarly, mutadis mutandis, with regard to willing notW.)

If A does not will W, he has effectively "allowed" notW to be – i.e. to continue if already present or to occur if it was absent. That is of course not per se equivalent to willing notW, unless A positively intended notW by abstaining from willing W. Here again, that is assuming no other cause or agent can and does bring W, or notW, about – in which case we can only refer to A's intentions or wishes. (Similarly, mutadis mutandis, with regard to not-willing notW.)

Various reasons may cause A not to actively will W – such as lack of energy, laziness, weak will, cowardice, indifference, lack of motivation, having better things to do, and so forth. All such reasons are *influences* in relation to the non-will of W by A; they make A's willing W harder by some degree. All other things being equal (i.e. if no other causes come into play), the *inertial* result will be notW (i.e. if W is not actively willed, notW will naturally take place). If A now decides to will W, he will have to overcome the said influences against W. Some new influences may however come and facilitate this choice, and make W easier to will than it seemed previously. (The same can of course be said, mutadis mutandis, with regard to notW.)

Apart from influences, one must also consider the terms and conditions provided by the environment more broadly. Influences are only those factors in the environment that have been perceived to be there, or at least are thought to be there. There remain factors that have not been perceived or thought to be relevant – but which in fact have causative significance.

We would similarly need to study the formalities of all other propositional forms, related in one way or another to volitionals, starting with influentials. We have already defined the positive influential forms, but not interpreted their negations. The way this is done is by denying the defining implications of the corresponding positive forms. Thus, at first sight, "X *does not* influence A to will W' means "A requires *either more or equal* effort to will W with cognition of X than without it". But on closer scrutiny, to arrive at the strict contradictory, allowance must be made for cases where A is neither aware of X nor aware of notX, or where A cannot will W at all, or where A is not a volitional agent. (Similarly, mutadis mutandis for "X does not influence A not to will W".)

With regard to other oppositions, we would for example declare the forms "*X* influences A to will W" (meaning "A requires less effort to will W with X than without X") and "*notX* influences A to will W" (meaning "A requires less effort to will W without X than with X") to be contrary, since "less effort with X" equals "more effort without X", and since "less effort" and "more effort" without X are incompatible (though not contradictory, since "equal effort" remains an option). On the other hand, the obverse forms "X influences A *to will W*" and "X influences A *not to will notW*" are not as equivalent as might first

appear, since we could argue that “the effort to will W” and “the effort not to will notW” are not necessarily the same (with or without X).

Our distinction between necessary causation and inertial causation (in chapter 2.1) has an important consequence for formal logic. Thus far, we have treated all natural conditional propositions, "When this, then that", as one, but in fact they are of two sorts. Sometimes we mean that the consequent follows the antecedent with natural necessity; but sometimes we only mean that the consequent invariably follows the antecedent *provided* no volitional interference prevents it. The latter negative precondition is very often left tacit in practice, but should obviously be taken into consideration in all reasoning processes involving such inertial propositions. For example, in a first figure syllogism with such a proposition as its major premise, we cannot draw a conclusion if this tacit proviso (which is effectively part of the middle thesis) is somehow incompatible with the minor thesis, and if we can draw a conclusion the tacit proviso becomes part of its antecedent.

As such examples illustrate, we should not rush to judgment in formal analysis, but proceed very cautiously, thinking the issues through. Logic is a big responsibility! An error of formal logic by logicians signifies thousands and millions of errors of ‘material’ logic by ordinary practitioners thereafter. It is comparable to mathematicians making a theoretical error, which is carried over into physics, architecture, and so forth, causing havoc in science and technology. Of course, contradictions would soon become apparent.

2. Aristotle’s four causes

The Greek philosopher Aristotle proposed four senses of the term cause, four ways with which anything may be explained. These “four causes” were called the material cause, the formal cause, the efficient cause and the final cause. An example would be a man-made statue: its granite is the material cause, its shape is the formal cause, the sculptor’s chiseling away at a stone is its efficient cause, and the image of Hercules the sculptor intended to produce is its final cause.

I have read some modern writer’s claim that nowadays only the efficient cause would be considered rightly named as a ‘cause’ – but that claim is not correct, as we shall now show. All the four causes fit the bill with regard to causality, and all four of them to some extent qualify as causation:

1. The material cause is a necessary though partial cause, since we can say of it: “without some material, there would be no sculpture; whereas with it, a sculpture becomes possible”. The stone used for the sculpture was thus a causative, although that particular piece of matter could have been replaced by another; i.e. it was only a contingent cause. The stone by itself does not a sculpture make, so it is only a partial causative.
2. The formal cause is something quite abstract, but can be considered another necessary partial cause, since “without some form, there would be no sculpture; whereas with it, there is”. Again, this particular shape given to the stone is not a necessary causative, since another shape could have been applied. Also, the shape cannot exist without material substrate, so it is not a complete causative.
3. The efficient cause, in our example, is of course primarily the sculptor – the human agent using his volition. But the term can also be applied to the inanimate chisel and the blows it gave the stone, ignoring for a moment who held it and willed its movements; or equally well, to a sculpting machine built by someone. In any case, the efficient cause can be regarded as a causative – again a necessary one (in the sense that *some* sculptor or moving chisel was needed) or a contingent one (if we focus on *this* specific sculptor, or this particular chisel and those particular movements), and in either case a partial causative (since matter to be sculpted was needed too).
4. The final cause in our example is not essentially a causative, but rather an *influential* cause, since it is only through *its imagination by* the sculptor that it has played a role in the genesis of the sculpture. However, we can still reduce this mental goal to a causative, if we consider that had the sculptor not thought of and intended some image, he would probably not have engaged in all these movements of his, and certainly if his movements had been wholly capricious they would not have resulted in such a

perfect resemblance of Hercules. Thus, here, we have another *sine qua non*, and again a partial causation.

Note that it could be argued that in the example we have given the formal and final cause are identical – a certain shape, resembling that of Hercules. But it should be clear that we might equally well posit other intentions of the sculptor as final causes – for examples, his intent to honor Hercules, or to make money by selling the sculpture to the Athens municipality. Any motive involved is a final cause.

Lastly, our example deals with a special case – that of manufacture of some finished product by a conscious, volitional agent. However, Aristotle's intent is that these four causal categories be used also in the explanation of natural events –in the wider world of living and inanimate objects.

- Clearly, all such objects must have a material cause and a formal cause; all particular phenomena apparently have substance and form (abstract characters found in common with other particulars in diverse measures). By analogy, we might also apply these concepts to the mental and spiritual domains. The term 'material' cause must thus be understood to refer to any assumed concrete substance, and 'formal' cause to any conceptual abstraction.[1]
- With regard to efficient cause, the concept is applicable not only to agents and their acts (i.e. volition), but to non-volitional entities and movements in living matter, and more broadly to non-living matter. For examples: the respiration of oxygen into our blood stream via our lungs is an efficient cause of our continued life; the momentary alignment of the sun, earth and moon is an efficient cause of the phenomenon of eclipse of the moon.
- As for final cause – the concept may be stretched to fit non-volitional life processes, as explained in our discussion of the quasi-purposive. Such 'conatus' is of course a mere abstraction, based on the observation of life perpetuating itself; but it does imply efficient causes at play within the organism. For inanimate matter, no concept of 'final cause' is applicable, except in relation to the purposes of some volitional being (including, eventually, God) or with reference to utility for the quasi-purposes of living entities.

Although I here defend Aristotle's foursome, I do not regard it – by far – as the last word on aetiology. If our intent is to categorize all the senses of the term 'cause', there are a lot more things to be said about it. As we have seen, causality is a very broad concept, not limited to causation or even to Aristotle's four causes however viewed.

[1] It could also be argued that substance and form are both abstractions, i.e. products of conception, anyway, and so ultimately indistinguishable.

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MEDITATIONS

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Abstract

A meditation is a voluntary exercise intended to increase awareness, sustained over some time.

The main purpose of the present *Meditations* is to inspire and assist readers to practice meditation of some sort, and in particular ‘sitting meditation’.

This includes practices such as: observing the mechanisms of one’s thinking, stopping unnecessary thought, forgetting things about one’s self and one’s life that are irrelevant to the current effort of meditation, dealing with distractions, becoming aware of one’s breath, being here and now.

After such practice for some time, one gets to realize the value of meditation, and one’s commitment to it grows. The need for behavioral improvement becomes more and more obvious, and one finds it easy and natural to put more discipline into one’s life. Various recommendations are given in this regard.

Prior to such practical guidance, so as to prepare the reader for it, the book reviews the theoretical teachings relating to meditation in the main traditions of mankind. The ultimate goals of meditation, the various methods or techniques used to achieve them, the experiential results of meditation, and the interpretations given to them, are topics treated here.

Be mindful…

but do not mind.

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1. Some Theoretical Considerations

1. What is meditation?

We may define a meditation as a voluntary exercise intended to increase awareness, sustained over some time.
May be counted as meditative endeavor: any volitional activity intended ***to increase one's own awareness***, generally or in a particular field (e.g. mentally, physically, socially, religiously, etc.). The term 'increase awareness' is here intended very broadly, to include all other similar expressions for the intensification, concentration, making more acute, focusing, deepening, heightening, raising, widening[1], enlarging, expansion or prolonging – of consciousness (or attention).
Meditation, note well, includes a time factor. It implies intentionally ***prolonging the duration*** of awareness at a certain level. This may mean sustaining attention at one's usual level for more time than usual; or surpassing one's usual level of attention, for one's usual span of time or longer. A merely momentary burst of extra consciousness can hardly be called meditation: it has to go on for an extended period of time.
Meditation on something[2], then, means lingering over it, devoting some attention to it, more than usual and/or for more time than usual. At first, one may succeed in sustaining the attention only briefly before wandering off; after a while, one may succeed in generating brief bursts intermittently; eventually, one may succeed in staying focused continuously, for a longer and longer time. Such improvements of performance depend on regular training.
Our definition of meditation thus covers *a wide array* of specific purposes, methods and techniques, among which we may mention the following. Note that these categories and examples are given off the cuff, without pretending to propose an exhaustive list or a taxonomy. Note that some of the categories given overlap; or again, some of the examples given really fall under two or more categories, though listed under only one.

- Focusing on touch sensations: feeling one's whole body or some part of it, observing one's feelings, sentiments, emotions, being aware of contact points, lines and surfaces (e.g. in yoga *nidra*).
- Postures and movements: e.g. sitting strait and immobile, walking slowly and mindfully (*kinhin*), yoga *asanas* and *mudras*, *tai chi* exercises, Hassidic dancing, Dervish whirling.
- Breathing awareness and exercises: e.g. feeling one's breath, yoga *pranayamas*, *chi kung*.
- Focusing on "bodily energy centers, pathways, flows"[3]: e.g. yoga *chakras* and *prana*, Chinese meridians and points and *chi* flows, the *sephirot* of kabbalah.
- Focusing on visual data: e.g. observing random or selected outer or inner sights, concentrating on candlelight, a symbol, a *mandala* or a statue.
- Focusing on auditory data: e.g. observing random or selected outer or inner sounds, making music, chanting religious chants or reciting a *mantra*.
- Thought awareness or control: e.g. observing one's streams of visual memories and imaginations and of verbal thoughts, blocking such streams; *metta* meditation (developing universal love).
- General activities performed with full awareness: e.g. *karma yoga* or *samu* (doing chores), *zen* poetry, calligraphy, drawing and painting, gardening, flower arrangement, tea ceremony.
- Involving the thinking mind: e.g. prayer, study of religious texts (primary or secondary), useful philosophical reflection, puzzling over a *koan*.[4]

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[1] Broadening of consciousness should be understood not only as (like a beam of light) 'covering more space', but more generally in the sense of 'bringing more things into consciousness', i.e. additional external or internal data or considerations. Psychologically, this may be taken to mean making things that were previously unconscious or subconscious more fully conscious. For examples, one's motives during action become clearer or one's habitual responses become more evident.

[2] That is, on some object – in the widest sense of the term 'object' (i.e. be it material, mental, spiritual, or whatever).

[3] This involves touch sensations and imaginations.

[4] N.B. Although some prayer or study or koan activity may be counted as meditation, it does not follow that all such activity is necessarily meditative. Some of it has the opposite, *soporific* effect; it is used as an escape, rather than as an instrument of consciousness development.

With regard to *prayer*: it is of course primarily intended as a means of communicating *to* God (or alleged incarnations of Him or gods or godlike creatures or even saints), by way of praise, invocation, confession, supplication, thanks, blessing, and so forth. Nonetheless, it is also often consciously intended as a way of getting spiritually[5] closer to or communing with the deity concerned, and in this perspective may be described as an attempt to expand or intensify awareness (of the deity).[6]

Similarly, *textual study* (e.g. Torah or Talmud study in Judaism) has many aspects. On the surface, its objective is to absorb the teachings within the text. But practitioners consider the information thus received to be a permanent communication *from* God (or the like), whose meaning is perpetually renewed according to the current life context of the reader. Here again, then, a consciousness-raising communion occurs, or is pursued.

A *koan* may be described as a riddle that is superficially meaningful but insolvable by rational or obvious means[7]. Its role (according to practitioners) is psychological – to fatigue the rational faculty to such an extent that it abdicates and allows reliance on a more intuitive kind of consciousness, one more able to break through to absolute reality. A credible reply to a *koan* can only be given by someone who has actually attained realization, and is only recognizable as such by someone who also has.

Meditation exercises are not necessarily mutually exclusive; sometimes, it is sometimes useful to use two or more of them at the same time. Thus, for instance, one might meditate on one's body posture and breathing while reciting a mantra. The mind is a complex domain; it can function on many unrelated planes simultaneously. For example, one can remember yesterday's events at home, while trying to solve a problem at work, while humming a tune; again, one might at once have verbal thoughts and visualize things.

Note that if awareness increases or persists spontaneously, i.e. without *ad hoc* volitional intent or effort (in the present or a sufficiently recent past), it is not counted as a product of meditation as such. It should also be noted that not all means used to allegedly raise awareness do indeed raise awareness – some techniques have the opposite effect: they diminish consciousness, they make it lower, narrower or shallower.

Thus, the use of psychotropic drugs like LSD or marijuana may not properly be regarded as meditation (even if such use was voluntary), for though they may give a momentary illusion of "high", they in fact on the whole diminish the scope of consciousness. Similarly, some techniques used in African Voodoo cults or other sorceries to produce "trances" would not be counted as meditative, insofar as they are found to in fact block awareness. Indeed, many would argue that certain common forms of religious, social or political indoctrination, which are claimed to raise awareness, in fact do – and are moreover secretly intended to do – the exact opposite.

In sum, 'meditation' refers to any means that in fact produces the effect of intensified or lengthened awareness. The mere claim that an activity has such effect does not automatically qualify it as meditation. In some cases, we may be uncertain as to whether to regard the activity under consideration as meditative or counterproductive.

Meditation is intended to awaken one, not to put one to sleep. Whatever the technique used, the essence of meditation is ***relaxed watchfulness and mindfulness***. Note this well. It is not a matter of by force grasping for something, but of sustaining one's alertness, one's "presence of mind" (or more precisely put, one's spiritual presence). It is naturally, with good humor, repeatedly remembering to be maximally aware. This implies a balance of determination and adaptation.

Will is involved in meditation, in the way of effort to increase one's receptiveness and attentiveness, so that one notices all that is going on. Also, as a meditation session progresses, the meditator (i.e. the one meditating) has to be sensitive to changing circumstances and needs, and flexibly apply the appropriate technique(s), to make the

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[5] I use the term 'spiritual' in a not very mystical sense, simply intending: 'pertaining to the spirit (or soul)'.

[6] For example, every time one blesses God for the food one is about to eat or has eaten, one is reminding oneself of Him – i.e. raising one's awareness from the material level of ingesting food to a spiritual level involving reflection on its source and purpose.

[7] For example: "What is the sound of one hand clapping?" – the answer to this question is not rational ("one hand cannot clap" or "one hand clapping makes no audible sound"), nor even demonstrative (waving your hand back and forth as if clapping).

meditation advance and not stagnate. One cannot force things, but must proceed with judgment and with precision. This is called "using skillful means".
Thus, the means and the end of meditation are essentially the same. Awareness is begotten by awareness; awareness begets awareness.
The aim of meditation, note well, is not only to increase awareness punctually, during the time one is meditating, or by a spillover effect for a short while thereafter – but also to make increased awareness a general habit in one's life.
The lessons we learn from 'formal' meditation sessions ought to be carried over in one's everyday thoughts and activities, in the way of 'informal' practice of mindfulness[8]. Although formal meditation is passively beneficial to times of non-meditation anyway, its full benefit becomes manifest to the extent that one actively continues to effectively meditate in the midst of ordinary living.

2. Thought and meditation

Although some thinking activities count as meditative, this is true only in some cases and under certain conditions. Usually, note well, thought is considered as antithetical to meditation.
This is essentially because thought consists of auditory or visual mental phenomena that are *intentional*. That is, thought consists of mentally projected sounds (mostly words) and/or sights (illustrating our meanings) by which we refer to *other* things. Meditation, on the contrary, consists in focusing on mental or other phenomena *for themselves*. The meditative attitude is more *experiential*.
If we compare thinking to sleep or stupidity, thinking is of course more conscious, and therefore (relatively speaking) qualifies as 'meditative'. Similarly, if we compare human thought to the cognitive power of lower animals. But in practice, much of our thinking is a sort of autonomic function of our brain, which goes on (and on and on) without our apparent voluntary participation or approval, or even seemingly against our will.
Our brain is continually flashing sounds and images into our mind. Such thinking is very dispersed and layered. A chain of thoughts arises suddenly – often triggered by some perception recalling a memory, and then proceeding through further mostly incidental associations – and goes on for some time, usually stopping due to the beginning of a new chain. Two or more such chains may occur simultaneously.
While there are thoughts that carry no noticeable emotional charge, most are accompanied by some positive or negative charge (e.g. a feeling of hope or of anger). Although some lines of thought are seemingly idle wanderings, many of them may be characterized as driven by some overall attachment (one seems driven by sexual lust, another by financial greed, another by power fantasies, etc.).
Generally, then, below the surface of our trains of thought, all sorts of *influences* on our volition are operating. We experience impulses, desires, emotions, and so forth. These influences all either put new trains of thought in motion or further stimulate them[9].
This has been called "the scattered mind" – but, more precisely, it is our (i.e. the self's) attention that is going every which way.
It is as if we are constantly subject to a strong centrifugal force, pulling our attention away from the center (from stability). This can be very fatiguing – in some cases, sickening. So long as our mind operates in such an obsessive-compulsive mode, we are not its master but its powerless puppet or victim. When we think, it should be because we have chosen to do so with some intent, not because we are forced to.

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[8] For example, meditation teaches one to intend (thoughts or actions) with a minimum (if any at all) mental or oral verbal expression; thereafter, one speaks less, or more efficiently, i.e. no more than necessary for the task at hand, to oneself or to others.

[9] For example, a sensation in our sex organ may cause us to remember a past lover, which in turn may cause reflection on marriage and divorce, etc. This line of thought might then suddenly swerve in another direction entirely, e.g. because we recalled a piece of music heard at that time; then we perhaps think about the singer, his political opinions, etc. And it goes on and on.

An important technical function of meditation is to show us how to control our thinking; this helps us find inner peace and improves the cognitive effectiveness of our intellect.

Very often, our problem is having too many thoughts in too many directions, and meditation helps us to rein them in, and achieve a ***more concentrated*** mental life. It teaches us to become *one-minded*; that is, to make our attention *one-pointed*.

Sometimes, our problem is the opposite: we tend to get stuck in a rut with repetitive thoughts, and meditation helps us develop a ***more expansive*** mental life. It trains us in the art of extricating ourselves from mental knots; we become more *open-minded* and *broad-minded*.

Usually, both the responses of concentration and expansion are needed to bring our intellectual faculty fully under control. If we achieve such levels of inner strength, we can also on occasion truly *stop* thinking and for a change *just* experience. Such control may seem impossible at first, but as one progresses in meditation it becomes more and more feasible – and its benefits become manifest.

Thoughts are sometimes valuable instruments of knowledge; but very often, they are mere interference, useless background noise. One way to learn how to stop extraneous thinking is by use of a '**mantra**'. This technique consists in repeating some meaningless sound(s) or a word (or phrase or sentence)[10] again and again for a long period of time.

A mantra is not exactly a 'thought', even when it is made up of some meaningful word(s), because the meanings of the words involved do not play an essential role in the meditative process. Its role is to occupy the mind and chase off disturbances. Reciting a mantra can help us develop our mental 'muscles' by giving us something to concentrate on *to the exclusion of* all other things.

Use of a mantra is based on acknowledgement that the brain tends to favor having a mental content. We therefore give our minds a chosen auditory content (the mantra), as we might give a hungry dog a rubber bone to chew on, to keep it busy and out of trouble. This content, being meaningless or having very limited meaning, is not such as to produce chains of thought. Rather, we can use it to *push off* any thoughts that try to arise, using it as an excuse for our refusing to attend to them.

In this way, we fool our brain, granting it the satisfaction of having mental content but at the same time attenuating its tendency to feed us new thoughts. Eventually, it becomes possible to drop recital of the mantra, and yet not be subject to involuntary thinking. This greatly enhances our concentration on experience, which was the intent of the whole exercise.[11]

It should be mentioned that sometimes the mental maelstrom is so absorbing that one is unable even to focus on a mantra for more that a few seconds. In such cases, one has to remember again and again to make the effort of mantra recitation.

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[10] Every tradition proposes mantras. In Judaism, I suppose any verse from the Psalms or Prayer book would do (but beware of using any Name of G-d in vain); one might try, for instance "*Oseh shalom bimrumav, hu yaaseh shalom alenu ve-al kol Israel, ve-imru amen*" (May He who makes peace in His heights make peace on us and all Israel, amen), or more briefly "Shalom". An example from the East (*Heart Sutra*) is "*Gate, gate, paragate, parasamgate, bodhi svaha*" (which means, I am told: Gone, gone, gone beyond, gone far beyond, greetings enlightenment); another one is simply "Om", pronounced deep and long, like the Tibetans. Some people say almost any statement can be used as a mantra. This may be true (though I doubt it), but what seems clear (to my limited knowledge context) is that the mantra must be voluntarily adopted. One cannot use a catchy tune or song that has already infiltrated one's mind as a mantra, because that is precisely the sort of mental content that a mantra is supposed to clean out of the mind! Thus, beware of advertising jingles, or pop music or songs – they have been pumped into your system by the media, because of their stickiness and with very commercial or political motives: they are not convertible into mantras. Avoid such mental viruses like the plague: they will not liberate your mind, but enslave it or at least thoroughly fatigue it. A good mantra is *not* mentally sticky – what makes it 'good' is precisely that we have to make an effort to keep it in the mind.

[11] Although the primary utility of a mantra is to clear the mind, it can also teach us to watch our thoughts come and go without getting too involved in them, i.e. absorbed in them, carried off by them. What the mantra does here is teach us how to develop a mental platform on which we can sit and watch our thoughts (verbal, visual/auditory and emotional mental phenomena) with some detachment. The Subject of consciousness is gradually distanced from the mental objects of consciousness, either by suppressing them or at least by objectifying them.

Mantra recitation is only described here as one of the ways to calm the mind, though perhaps one of the easiest. Other methods might of course be used to achieve the same result, like meditation on one's breath, on one's body or on some visual symbol[12].

After some practice of mantra or other forms of meditation, it becomes possible to control one's mind by direct will, without resort to such artificial methods. Having already (in this session or previous sessions) experienced a relatively calm state of mind, one learns to remain attached to it or keep returning to it.

It should be added that there are also methods of meditation that resort to meaningful thought, to the same effect.

Prayer is such a method, because if one prays correctly one is intensely concentrated on one's prayer, to the exclusion of all other mental content. Note well: it is not because formal[13] prayer is often repetitive (like a mantra) that it functions as a meditation, but because of its demands on our attention. If one prays without investing effort, letting all sorts of stray thoughts occupy one's mind in the background while one utters hollow words, one cannot be said to be meditating, let alone truly praying.

> Repetition of a Divine or divine name is (in my opinion) a subset of prayer. This practice is found in most traditions, including (to name a few) in Jewish kabbalah (e.g. that of Abraham Abulafia), Sufism (*dikhr*) and Buddhism (e.g. the *nembutsu*). Although such recital acts in much the same way as a mantra, it is best classified as prayer, since the use of that specific name is considered essential to its efficacy by its practitioners. It is not meant as a mere mind-filler, but as a key to the door of some specific spiritual realm.

More precisely, one can distinguish three levels of meditation (in Hebrew, *kavanah*) in prayer, each of which of course has many degrees. At the lowest level, one at least makes the effort to focus on the words one utters (from memory, or by reading the sounds out of a prayer book), without thinking of irrelevant things. At the next level, one makes the additional effort to concentrate on the plain meanings of the words and sentences one is uttering, so that they are not just sounds.

At the highest level, one additionally takes care to adopt appropriate attitudes. The latter include: being aware Whom one is addressing, where one is (if in a holy place), feeling awe and love, and – as appropriate to current circumstances – expressing submission, worship, penitence, entreaty, gratitude, etc. Here, then, one is relating oneself to the prayer or to the object of prayer.

Of course, one usually weaves in and out of the different levels and degrees of attention, depending on one's motivation, mood, stress, worries, distress, etc. One's measure of concentration divulges the importance one attaches to the prayer. If one prays patiently and intently, it signifies a certain amount of sincerity. But prayer with a scattered mind is not entirely worthless, because most people have difficulty controlling their attention.

Note in this context that other forms of meditation can be beneficial to concentration during prayer. One must, for a start, show one's seriousness of purpose by eliminating as many external disturbances as possible. Trying to pray while the TV is turned on is obviously not very favorable. Moreover, it is recommended that before formal prayer one sits or stands quietly for some time, till one reaches a palpable inner silence, stillness and serenity, a calming of one's thoughts, movements and emotions – one's subsequent prayer will then be greatly enhanced.

Similar comments can be made with regard to study of religious texts, or to philosophical (or other) discourse. Insofar as such thinking activity trains us to concentrate our attention, in various ways and to various degrees, it may be classed as meditative. But to the extent that it is done 'unconsciously', it is mere thought and not meditation.

The *koan* exercise, by the way, has a similar function. The *koan* is not intended to divert our attention, but to strengthen the psyche. As the practitioner puzzles over his chosen absurd riddle, his attention becomes more and more intensely focused and exclusive. Without such increasing mental concentration, the exercise is a waste of time.

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[12] Like a Jewish six-pointed star – or a Christian cross or an Islamic crescent. Christians also gaze at icons or statues. Buddhists use complex *mandalas,* filled with significant drawings, as objects of meditation, and also gaze at statues.

[13] I am of course here referring to prayers found in prayer books, rather than to prayers one makes up as one goes along.

Ordinary thought, more often than not, is *an obstacle* to successful meditation. If, for instance, during a *tai chi* move your mind wanders off to the pretty girl watching, or you wonder what you will have for supper tonight, or you reflect on something annoying someone said to you yesterday – you are bound to wobble, or forget some move, or make a wrong move.

If an activity requires a certain amount of concentration, and such concentration is not provided, the performance is bound to be imperfect. Whatever one's meditation, one has to constantly make an effort to concentrate, and not allow oneself to just 'go through the motions' while thinking of other things. Pretending to meditate is not meditation.

Mastering one's thinking activity, then, is an essential part of all meditative endeavors. So long as anarchy reigns in one's mind, one's consciousness remains at a superficial level. Paradoxically, it is only when thought is brought under control that it can begin to dig deep and fulfill its cognitive function.

3. The goals of meditation

Meditation is a means to enhanced consciousness. The ultimate goal of meditation is, accordingly, to attain *the highest level of consciousness* possible to one. This *summum bonum* (highest good) is generally understood as threefold, although the three aspects are ultimately one and the same event, which may be called '**realization**'.

The first aspect is '**enlightenment**', which may be defined as the overcoming of all personal ignorance, illusion or delusion, in the broadest sense. It is a maximal, all-inclusive consciousness; the widest and deepest potential for knowledge (including information and understanding).

The second aspect is '**liberation**', which may be defined as the overcoming of all personal weaknesses, difficulties or obstructions, in the broadest sense. Thus, *enlightenment relates to cognition, while liberation concerns volition.* Granting they are possible achievements, they necessarily come together and not apart, with liberation as a necessary adjunct of enlightenment. Knowledge is freedom.

> Note that the term 'enlightenment' (or 'illumination') is often construed as referring to some inner experience of light. But that mental analogy to physically 'seeing a light', though occasionally valuable, is not the essence intended by the term. One should rather have an image of a man walking tentatively in the dark, feeling his way slowly – when suddenly a bright light is turned on. Now, he can at last see everything around him and where he is going, and he can walk about freely, and find any object he seeks without knocking into things. This analogy is preferable, because it illustrates the conjunction of light and liberty. A man in the dark is like a man in chains, hardly able to move, uncertain and afraid, unable to travel directly to any destination and having to expend much too much effort to go any distance. When the light goes on, he is instantly freed from his invisible chains, and he can hop, skip and jump at will, and dance with joy.

The third presumed consequence of achieving the apex of consciousness is greatly enhanced ethical understanding – or '**wisdom**'[14]. *This relates to the third function of the soul, which is valuation.* It suggests a maximum of sagacity in one's value judgments and pursuits. It would not suffice to have knowledge and freedom, if one were ignorant of values and thus incapable of virtue.

Just as valuation in general involves the operation of both the functions of cognition and volition – so wisdom is the natural and necessary outcome of enlightenment and liberation. At every level of human experience, sagacious valuing is indicative of a harmonious intersection between knowing and willing. Wisdom, or extreme sagacity, occurs when these functions reach their peak of perfection.

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[14] Some would contend that the attainment of enlightenment/liberation places one "beyond good and evil". But the sense of that phrase should not be misconstrued as implying that one then becomes independent of morality. Quite the contrary, it means that one becomes so wise that one cannot imagine any trace of value whatsoever in immoral or amoral practices. The proof of that is that realized teachers always preach morality to their followers. Not because the teacher needs to remind himself of such strictures, but so as to preempt the followers from losing their way on the way to realization.

It should be stressed that wisdom does not only signify *knowing* right from wrong in any given situation, but also implies naturally *doing* what is right and avoiding what is wrong in that situation. It is not a mere theoretical understanding of values, but additionally involves a practice of virtue that testifies to having fully internalized such understanding. The cognitive and volitional faculties of the sage are concordant.

While full enlightenment, liberation and wisdom may be identified as the ultimate goal(s) of meditation – we may of course still consider increased but less than complete degrees of knowledge, freedom and discernment (between good and bad, right and wrong) as valuable intermediate goals. The situation is not "either-or" – i.e. either total blindness, impotence and stupidity, or utter perfection. We may have to gradually work our way towards the ideal, going through partial improvements until we attain the desired result.

Our experiences are likely to be proportionate to our progress along that Path or Way. We may have momentary so-called mystical experiences of lesser intensity than the ultimate experience of enlightenment, but find such reward encouraging and stimulating. If we practice meditation correctly and regularly over an extended period of time, our sense of freedom may increase noticeably. Things seem clearer and easier, and we exhibit more and more wisdom in our choices.

Traditions thus speak of a *via perfectionis* or *dhammapada* (way of perfection), implying a long spiritual road to be traveled, until the final step radically changes everything for us and we attain full realization.[15]

It should be noted that the term 'realization' has a double meaning, one relative and one absolute:

- It signifies, firstly, the actualization of one's personal full potential as a human being, i.e. the full maturing of our faculties of cognition, volition and valuation.
- Additionally, it suggests that this self-perfection coincides with the extreme achievement of cognition of absolute reality, maximum freedom and wisdom of choice.

Logically, these two attainments are not necessarily identical: it could be argued that a given person's relative best is still not good enough in absolute terms. However, some spiritual philosophies overcome this possible objection by considering the possibility of stretching the pursuit of ultimate perfection over more than one lifetime.

Furthermore, there are two ways to view the meditative enterprise; these ways are referred to in Zen as pursuit of gradual vs. sudden realization.

- We can view ourselves as standing somewhere on a mountain, eager to climb up to its peak, by diligently "working on ourselves". We have to find the best way to do that, either feeling our way alone or using maps handed down to us by predecessors, or traveling with other seekers. Sometimes we may fall back, and have to climb again just to reach our previous position. Sometimes the mountaintop seems nearby; then, as we approach it, we discover the mountain is much bigger than it seemed from lower down. This mountain climb may take a lifetime of hard labor; some say many lifetimes.
- Another way to view the challenge is as a puzzle to be solved. If we could only find the key, it would open for us the door to realization. No need for one to climb or move mountains. One needs only constantly be alert for some clue, attentive for some hint – which may fleetingly come from anywhere[16]. If we spot it somehow, a veil will be lifted and all will become clear right where we stand. The mountain will instantly disappear, and we will suddenly find ourselves at its central axis (just like someone at the top). There is no climbing to do; the job requires detective work.

Of course, both perspectives are true and worth keeping in mind. The long-term climb seems to be our common lot; but it is our common hope to somehow immediately pierce through the mystery of existence. The latter is not

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[15] I should add that I cannot, so far in my life, *personally vouch* for the feasibility of utter enlightenment, liberation and wisdom. I assume it to be possible, because many human traditions claim this to have been attained by some individuals: this is hearsay evidence in favor of the thesis. Moreover, it seems conceivable and reasonable to me that such heights of achievement should be possible. However, to be quite frank about it, I have not myself reached them. But even if I too were a live witness, the reader would still have to consider the information as second-hand, until if ever he or she in turn personally attained realization.

[16] This is the proactive spirit of *koan* meditation, advocated by the Rinzai Zen school, as opposed to the more "passive" looking *zazen* meditation, advocated by Soto school. The latter, which would be classified in the preceding paradigm of mountain climbing, is of course in fact not as passive as it would seem to the onlooker.

so much a shortcut on the way up, as a cutting through and dissolving of the underlying illusions. Moreover, the theater of our search for insight is not so much "out there" as "in here".
Another distinction to note is that between temporary/partial and permanent/full realization. On the way to complete realization, one may momentarily experience glimpses of it. Such fortunate foretastes of heaven do not however count as realization in a strict sense. One is only truly realized when one is irreversibly installed in such experience.
With regard to terminology, note that the terms realization, enlightenment, liberation, and (the attainment of) wisdom, are in practice mostly used interchangeably, because one cannot attain any one aspect of this event without the others. Sometimes, realization (etc.) is written with a capital letter (Realization), to distinguish complete and definitive from partial or temporary realization. Usually, the context makes clear which variant is intended.
Another term commonly used for realization is '**awakening**'. This term suggests that our existence as ordinarily experienced is like a dream – a dream of problems that cannot be solved from within the dream, but only by getting completely out of the state of sleep. I have experienced such dreams occasionally: I was somehow cornered in a very difficult situation and could imagine no way out of it, no winning scenario; so (realizing I must be dreaming), I simply willed myself out of sleep[17], solving the problem in a radical manner.
To the person who has just awoken, the world within the dream, with all its seemingly inescapable difficulties, permanently loses all importance, instantly becoming nothing worth getting concerned with anymore. This metaphor illustrates how spiritual awakening is more than a set of ad hoc solutions to the problems of ordinary existence: it is a general solution that cuts through the illusions and takes us straight to the underlying reality. This image makes realization easier to conceive.

4. Theory and practice

It is well to distinguish meditation *practice* from *the theory of* meditation.
The present text is a 'discourse on meditation', for which a term ending in '–logy' ought to be coined if one does not already exist[18]. This text is not itself 'meditation', although to be honest it is intended *to record* insights obtained during meditation sessions, *to develop a theoretical understanding* of the nature and function of meditation, and thus *to serve as a practical guide and inspiration*, and help the author and others find ways and means to improve meditation. Such a text might thus, in the limit, be viewed as itself a meditation, in the sense that it is intended to intensify one's awareness – but, nevertheless, reflecting on meditation should not be regarded as a substitute for actual practice of meditation.
There is on the one hand the activity of meditation *per se*, which involves some technique like for instance ceasing to think discursively; and on the other hand, we may be thinking about or teaching meditation, even while trying to meditate. The latter is in a sense also a sort of meditation, but it is less directly, less purely so. The latter is a means, whereas the former is its end. Theory is no substitute for practice, and may even in many circumstances constitute a formidable hindrance. Discourse is often helpful, and maybe even necessary; but at some stage, it must be stopped to allow meditation proper to proceed.
Meditation is something that ought to be *done*, rather than something to be talked or written about, or heard or read about. To forever only think about and/or discuss it – is to engage in a sort of sterile mental masturbation. The popular injunction "Just do it!" applies here, as it does in sports. One has to be pragmatic about it and get on with it, practicing regularly, and learning and advancing by doing.

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[17] The experience may be compared to being at some depth underwater, and deliberately swimming up to the surface.

[18] I do not know the classical Greek term for 'meditation', which could be used as prefix here. Perhaps the Aristotelian term for practical wisdom, *phronēsis* (Gk. φρόνησις), can be used in a modified sense; whence, "phronetology" or maybe "phronetics". Or perhaps we should prefer the Epicurean term for lucid tranquility, *ataraxia* (Gk. ἀταραξία); whence, "ataraxiology". These are just amateur suggestions.

Moreover, although meditation may be broadly defined as a de facto "pursuit" of increased awareness, in practice it is not lived as a goal-orientated activity. It is most successful to the extent that one succeeds at eliminating such other-direction from one's mind, and one acts in a "goal-less" manner. The reason for this is that, at least with regard to meditation, focusing on a goal, however ethically justified, *distracts* one from the means, and therefore reduces its effectiveness.

For this reason, it is necessary to behave in a paradoxical way, and having decided once and for all to meditate, one forgets all about the goal and concentrates on the means. Such "squaring of the circle" is admittedly not always easy. But no one said meditation is always easy. It requires willpower, effort, perseverance, and much ingenuity and skill. To get anywhere worthwhile, a price has to be paid.

However, although efforts must be made, and sustained, and sustained – at some stage, meditation gets to seem effortless. This is not so surprising, if we consider that the means and end of meditation are essentially one and the same – more consciousness.

Once meditation is understood to be at its best when freed of ulterior motives, one sees that there is no "bad" meditation session. Every session should be viewed as successful and beneficial – even if one did not have a noticeable positive experience, even if one only experienced difficulty throughout. The benefits are often subterranean and incremental – as becomes clear after months or years, when one suddenly realizes one's situation has considerably improved over time. All time spent meditating is valuable; the effect is cumulative. The mere act of meditating is "like money in the bank"!

The meditator should not attach to any particular scenario of meditation. Usually, the session starts with difficulties, and ends on a higher note. Sometimes, on the contrary, a session starts "well", and then seems to degenerate. At other times, the best experience (if any) seems to occur in the middle of the session. But it does not matter how it goes, because it is not the purpose of meditation to give us impressive or pleasant experiences. When encountering turbulences, one should rejoice at having gotten the chance to discover them. Such encounters are the real value of meditation, without which the underlying difficulties would remain unseen and untreated. One cannot clean up the house without raising dust.

Concerning theories, I do not see why a synthetic (or more pejoratively put, eclectic or syncretic) approach is to be excluded at the outset. Many teachers recommend a single spiritual tradition be chosen and adhered to, rather than trying to construct a patchwork from various sources. One problem with such picking and choosing is that one tends to select what seems personally easiest, which does not necessarily make up an effective pathway, and may even in some cases be very misleading. Nonconformity is often just hedging one's bets – and often a risky, razor-edge path; some would call it spiritual brinkmanship.

On the other hand, an advantage of spiritual individualism is that one is more able to avoid getting bogged down in ideas and rituals that have no real bearing on meditation, but are the accretions of centuries of popular superstition and clerical religion. Also, one can tailor one's means more precisely to one's specific needs. Moreover, the different traditions undoubtedly have things to teach each other[19]. A jack-of-all-trades is a master of none – but special qualifications can sometimes take you out of a bind that others were never trained to handle.

In any case, in the course of meditation, it is certainly wise to keep all interpretative doctrines at bay, or in dynamic equilibrium, and concentrate single-mindedly on here and now experiential factors. For meditation is not the taking up of a particular point of view, but an attempt to integrate or transcend them all.

Doctrines are worth studying as helpful guides; they often protect one from errors or preempt foolishness. Nevertheless, they should not be allowed to control one's spiritual life to such an extent that one gets to lose touch with obvious realities. They are useful tools, but one must remain critical (in a healthy-minded way), and conscious that they sometimes overly inhibit spontaneous research and discovery. To my mind, there is a human element in all doctrines, and we should never surrender personal intelligence and accept them blindly. We should be prepared to distill the essentials from the non-essentials in them.

Meditation is a natural and universal practice, common to all people and peoples (and perhaps even all higher animal species). Nevertheless, different cultures have emphasized different techniques, experiences and

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[19] As the Talmud puts it: "Who is wise? He who learns from all men… 'From all my teachers I have gained wisdom'" (*Sayings of the Fathers*, 4:1).

interpretations of meditation. However, such divergences ought not be excessively stressed in our study of meditation: what is amazing is how much disparate cultures converge in their purposes, methods and results.
Whatever their doctrinal variations, these different traditions have in common a very human yearning for "**spirituality**" and efforts to improve in that direction. The realization of spirituality is the identification of oneself with something beyond, or over and above, the physical, and to some extent mental, concerns of everyday life. It is the initial realization that there is more to life than these materialist concerns. A "spiritual person" is someone on his or her way to, or who has come to, this initial realization – as evidenced by interests in thought and commitments in action.
Meditation practice is one common expression of such realization. It is a pursuit of redemption or salvation (in some sense of these terms) – a personal, and eventually collective, soteriological endeavor. But it is ultimately religiously neutral – its power and value is biological and neurological, independent of any religious preference.
However variously they interpret it, all those who discover the practice of meditation consider they have found a precious treasure. It is, over time, a powerful aid to self-improvement, helping us unravel knots deeply buried in our psyche, gradually clearing it of all cognitive, attitudinal or behavioral difficulties. Just as a seed one plants in one's garden takes time to become a seedling and a mature plant, then to flower and bear fruit, the results of meditation unfold over some time.

5. Interpretations

The underlying philosophy of meditation, in common to the main religious traditions, is often referred to as "**theosophy**"[20]. To formulate such a philosophy is of course not to claim it as necessarily true in all respects; we must admit it to be a speculative philosophy or metaphysic. We can pursue the ends it sets in the way of a personal faith, without having to definitively 'prove' it and 'disprove' competing doctrines.
If we consider the seven historically most influential current mystical traditions – namely those of Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism and Secularism[21] – without meaning to ignore or discard others (which are here assumed to have much in common with parts of one or the other of the main paradigms[22]), we can highlight some of the similarities and differences between them.
In almost all these traditions, meditation is understood as a "return" to some original high state of consciousness, or "reunion" with the underlying spiritual Source. Man is considered as having at some stage "fallen" from his natural, ideal spiritual condition, and become apparently "detached" from his place in the unity and totality of absolute reality – and thereafter, he struggles to recover it, and merge back into the whole[23].
In the secularist approach, the corresponding argument would rather be developmental and/or evolutionary: i.e. though to all evidence we never before had higher consciousness, it might be something we (as individuals and as a species) can realistically strive for so as to reach our fullest neurological and biological potential. This developmental or evolutionary peak, however, need not be assumed to correspond to some mystical experience of absolute reality.
One major *issue of interpretation* is that of admission or rejection of Monotheism, the belief that the ultimate reality is a spiritual Person, i.e. God. Four of the seven traditions – namely Judaism, Christianity, Islam, and

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[20] Etymologically = God + wisdom. This may also be conceived atheistically (despite its name). It has also been called "the perennial philosophy" (by Aldous Huxley), because of its recurrence in history and across cultural barriers. Many writers throughout the ages have managed to formulate all or parts of this philosophy with considerable success, and I do not here presume to equal or surpass them. My purpose here is only to discuss some aspects of it, on the assumption the reader has already studied (or will eventually study) other texts.

[21] Wherein I would include Confucianism, though it has some conceptual commonalties with Taoism; which one would expect, since they both come from the same culture, China.

[22] All of which, by the way, the author has studied to varying degrees – theoretically through various texts, and in some cases practically.

[23] Judaism speaks of *teshuvah* (return), *devekut* (adhering) and *yichud* (unification). The Sanskrit word 'yoga' refers to union, as does the Greek word *henosis* used by Neo-Platonism.

Hinduism – opt for monotheism, although to varying degrees. Judaism[24] and Islam[25] insist on exclusive monotheism, whereas Christianity[26] opts for a three-in-one doctrine, and Hinduism[27] accepts a large pantheon of alternative or lesser forms of divinity (avatars and gods).

Buddhism, on the other hand (at least officially), denies that the ultimate reality is an eternal spiritual entity, or Soul (*Atman* in Sanskrit), with consciousness, volition, values and a personality (i.e. a Self) – in short, denies the existence of God[28] – and instead affirms the ultimate "emptiness" of everything[29].

However, upon closer scrutiny we find that Buddhist doctrine does (perhaps as it has evolved over time) suggest a substantial ultimate reality of sorts – something called "the original ground of mind (or of being)" or "Buddha nature", which for all intents and purposes could be equated in many ways to the monotheistic idea of God. Moreover, it is evident that the Buddha has de facto become deified in the popular mind, and we find the Buddhist masses identifying him with what we would call God.

Taoism is comparable to Buddhism, in that the Tao (or Way) seems like something impersonal, much like the "empty original ground". But there are occasional mentions of Heaven in Taoism that suggest a belief in God, or which leave the issue of God relatively open or ambiguous[30]. On the other hand, while Taoism does have Immortals (comparable to Buddhas), it does not seem to treat them quite as gods[31].

Secularist philosophy, like Buddhism, rejects the notion of God. Atheists may nevertheless engage in meditation with rather materialist psychological and ethical motives, arguing that it is healthy for the individual to pursue centering and peace of mind, and good for society in general that people do so. They also point to practical benefits, like improved concentration at work, or better human relations. Thus, they meditate on the basis of a

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[24] Judaism rejects any notion of incarnation of God. In the Jewish view, God is spiritual and not material. The Torah statement that God created humans in His image and likeness (Genesis 1:27) must be understood to refer to spiritual, not physical resemblance. God's infinity cannot be concentrated in a finite being (as many other religions suppose when they deify some historical or legendary figure), and He is not to be confused with the phenomenal universe of matter, space and time (as Spinoza confuses Him).

[25] Although it should be mentioned that there is a doctrine within Islam that grants Mohammed, the Messenger of *Allah* (God), the Divine status of "human incarnation of the Spirit" (to quote Martin Lings in *What is Sufism?* Cambridge, UK: Islamic Texts Society, 1993. [P. 33]). In this context, Islam should be compared to Christianity and Hinduism rather than Judaism.

[26] The doctrine of the trinity was a logical outcome of the apotheosis of Jesus, the founder of Christianity. The Church wanted to grant Divine status to this man, yet at the same time emphasize his spirituality and reaffirm the Judaic doctrine of unity. Note that the Christian idea of trinity differs from the apparent radical duality of Zoroastrianism. Whereas Christian philosophy seems to adhere to the unity of God at the highest level, Zoroastrian philosophy seems to regard the two basic formative forces of good and evil it posits as irreducible primaries. Analogous concepts and issues are found in Hinduism, in greater multiples.

[27] It is in practice cheerfully polytheist, although at an academic level it acknowledges monotheism as the ultimate truth. Polytheism generally tends to a radical pluralism (of many irreducible primaries), although some forms of it may be considered relatively compatible with monism (or monotheism).

[28] Which was in Buddha's India advocated by Hinduism.

[29] Note that Jewish mystics (kabbalists) have proposed a similar concept, that of the *Ayn* (Hebrew for "There Isn't", i.e. Non-Being, different from and beyond ordinary being) or *Eyn Sof* ("There Isn't an End", i.e. Infinite, in extension or breadth [Great] and in intension or depth [Unfathomable]).

[30] Anyway, Taoism is essentially a Monist philosophy, in that it conceives the Supreme Ultimate principle as a Unity. However, since Taoism describes this One as giving rise to Two (Yin and Yang), and then to Many, it may be compared to Dualism, and even, at times, to Pluralism (this is not said with any intention to downplay Taoism, but rather to point out its richness).

[31] To my limited knowledge (which is why I have placed this religion closer to Secularism). However, it should be noted (though the books we read about it in the West little mention the fact), Taoism as it has been popularly practiced in China involves many supernatural beliefs (many of which we would class as lowly superstitions) – ghosts, demons, exorcisms and the like.

more narrow meliorism and eudemonism, i.e. as a means to self-development and happiness in a materialist worldview framework.[32]

The doctrinal diversity of the main traditions should not blind us to their essential unity. They mostly agree that the ultimate reality, the common source of all appearances, has to be unitary. *Diversity always logically calls for explanation: only a Unity seems to have a satisfactory finality.* This One is the Absolute – while the multiplicity of appearances, whether they seem real or illusory to us, are in comparison to it all relative. The true philosophy is thus necessarily Monist, which does not mean that we can deny the parallel existence at some level of plurality.

Among the features the traditions have in common, then, is the aetiological idea of the underlying unity of all existents being an inexplicable, uncaused, first cause. In monotheism, this is the status of God, the Creator of the world. Similarly, Buddhists and Taoists speak of the "unborn" and "unconditioned" as the background and origin of all phenomena.[33] Concerning the debate between Theist monism and Atheist monism, more will be said further on.

We should also emphasize the soteriological commonalities between the different traditions. The world as a whole strives for its salvation, the return to its primeval unity. Redemption is both an individual and collective need and task. By improving oneself, one helps others improve and repairs the world as a whole; and one improves oneself by making an effort to help others and take care of the world.

In Buddhism (or at least its Mahayana version) it is considered that the highest realization (Buddhahood) is only possible to those who dedicate themselves to the redemption of all others sentient beings (this is called "the way of the bodhisattva"). Those who more selfishly work only for their own salvation (as Hinayana Buddhists are accused of doing[34]) do not, so long as they do so, reach the highest spiritual peak.

In Judaism, and similarly in other monotheistic religions, since we humans, like sparks issuing from a flame, all share in the spiritual substance of God, we may – by working to redeem ourselves and helping other people find salvation[35] – be said (with all due proportionality and respect) to participate in God's redemption[36]. Reciprocally, He has a direct interest in our salvation and it is equally to His advantage to promote it. All have a common interest, and cannot find true rest in isolation.

This is in Hebrew called *tikkun atsmi vehaolam*, meaning the 'repair' of oneself and the world, implying a loss of wholeness that has to be recovered. It should be stressed, however, that this doctrine is not an invitation to pretentious claims to human divinity. Though we hope to someday be reunified with God, the Divine Source of our soul or spirit – that does not mean we will ever *become* the whole of God. It only means we will lose our illusory individuality, and discover our real place in the universe as very tiny fractions of God's wholeness.[37]

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[32] Note that some secularists nowadays subscribe to meditation with reference to ideas that were in fact diluted from general theosophy, or some fashionable Eastern religion like Buddhism, while unaware of or refusing to admit their spiritual motives and interest.

[33] Note that the idea of causelessness is also found in secularism. In modern physics, we have it in the Heisenberg Principle, which can be taken to suggest spontaneity of some natural processes; or again, in the Big Bang theory, with regard to the existence of the primal seed of matter and the initial explosion thereof. In psychology, some thinkers (though not all) admit the existence of freewill in humans.

[34] I think this is an unfair accusation. The Theravada (called Hinayana by the Mahayana school) ideal is to concentrate on fixing oneself first; and then once has done so, one's sincere compassion for others will naturally be awakened (this is a possible interpretation of Gautama Buddha's trajectory). Whereas the Mahayana consider it is necessary to work on oneself and for others at the same time, because each side of this path helps the other succeed. Both approaches are probably equally valid, I would suppose – depending on the character or "karma" of the person involved.

[35] The *tsadikim* ("just men" in Hebrew), and in particular the *Moshiach* ("Anointed" one, or Messiah), are actively involved in saving souls. That is their spiritual profession, we might say. But ordinary people also of course participate in this work occasionally, if only as amateurs.

[36] This is implied, notably, in the philosophy of the kabbalist Isaac Luria.

[37] It should be noted that orthodox Jewish doctrine might not include a final reintegration of all souls into God. I base this supposition on oral rather than written teachings. I recently questioned one Rabbi on the subject (namely Rav Mendel Pevzner of Geneva, a Lubavitcher chassid). He taught that we will never merge back into God – but will always remain separated as individual souls, having the function to eternally declare God's sovereignty and praise Him. Moreover, he confirmed, some evil individuals (at least the likes of Adolf Hitler) will never return to God. I did not inquire on what texts

6. The coexistence of the One and the many

There are apparent logical difficulties in the idea of Monism that need to be addressed, if we are to grant it credibility. One question people ask is: How can the world be essentially and absolutely (and only) One, and yet appear as a multiplicity of passing phenomena, entities and events? Can a whole be at once considered unitary and as having parts – is not such an idea self-contradictory? Are the One and the many compatible?

This question can be answered, without indulging in overly mystical discourse, if we realize it is already loaded with a certain epistemological point of view. There are in fact two possible viewpoints as to the cognitive and metaphysical relationship between the apparent many and their essential oneness. We can inductively claim either "unity in diversity" or "diversity in unity".

In the first thesis, which is most commonly known and advocated, and which is the premise of the above question, the One is a *conceptual derivative* of the many. According to this Pluralist theory, we directly experience a world of multiplicity, and then use our rational faculty to hypothesize an underlying Unity. The One is then a mere concept – it is the most universal of all concepts, the fact of existence all phenomena share, the ultimate uniformity they share.

The problem with such a view of the One as derived from the many by conceptualization is that, as we have already mentioned, it has an inherent contradiction – the concept (of unity) we derive from the percepts (of manifold things) is in logical conflict with its source. Since things are primarily (phenomenologically) many, it is difficult to credibly affirm that they are ultimately (ontologically) One. The epistemological order of things affects the metaphysical perspective.

However, there is an alternative to this theory, which is less widely known and advocated, namely that the many are *ratiocinative derivatives* of the One. This Monist hypothesis, which is found already in Buddhist philosophy, and is today implied by modern physics, offers a less paradoxical dichotomy. In this reverse perspective, pure (pre-rational) experience is quite unitary; it is the cognizing Subject, who cuts this phenomenological primary given into a multiplicity of shapes, colors, motions, sounds, etc.

If we sit in meditation and just experience, we can soon realize that without interference on our part the multiplicity *is* a unity. It is only when we start analyzing it – making comparisons and contrasts, considering logical compatibilities and conflicts, and so forth –that the original unity is broken down into a seemingly endless multiplicity. Granting the epistemological primacy of unitary experience, we can understand that ratiocination is the source of apparent multiplicity. In that case, the One and the many do not appear so much in logical conflict, and we can safely opt for a Monist metaphysical position.

Another question people often ask is by what process did the One generate the many? Was the One inherently *unstable*, that it had to break down into the many? Note that, whereas the preceding question related to the statics of the Whole-parts relationship, this one concerns the dynamics of it.

However, we can reply that this second question, like the first, involves presuppositions. One need not view the relationship of the One and the many as having a beginning or an end – it can be viewed as timeless; we can consider that the One has always been actually one and the same with the apparent many. Another viewpoint, more accurate in my view, and more in line with the Monist thesis just formulated, is to say that the One is always

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this doctrine is based, and even whether all Jewish authorities agree with it. I was a bit skeptical when I heard the part about the righteous souls remaining separated; but upon reflection, it does not seem logically inconceivable. Certainly, there are people who deserve eternal damnation and can never be purified of their sins whatever hell they go through. Granting that, then the possibility that just souls remain forever suspended in paradise sounds reasonable, too. It is worth emphasizing in this context that Judaism teaches love of life on earth more than any other of the main religions: Judaism cannot position itself radically against the world (totally rejecting the body and mind), since it considers that God created this world (including human beings) intentionally and that He views his Creation as "good" and even "very good" (Genesis, chapter 1). Notwithstanding all such issues, let us not forget that God remains One throughout: He always was One, He is still One now, He will always be One. Any separateness people may experience is an illusion of theirs, which their Maker does not share in.

potentially apparently many, such potential being actualized as of when and so long as some Subject engages in ratiocinative analysis.

While the second question can be asked even from a non-theistic (or atheistic) perspective, it is most often asked in relation to Monotheism. People ask: Why did God create us, and the world at large? Was He discontented, in need of something, moved by some want, or did He act capriciously? If so, does such supposition not contradict the idea of God as perfect and self-sufficient, as well as ultimately One, alone and indivisible?

Moreover, if He created us intentionally, why is it our mission in life to go back to pre-Creation? Does not the idea of 'repair' (*tikkun*, in Hebrew) imply an error to be corrected? Perhaps the error was not the Creation as such, but only the "original sin" in the Garden of Eden, i.e. a misuse by us of the faculties God gave us? Did God not foresee such misuse of volition (in which case He would have refrained from creation altogether)?

It is proper for a believer to ask such critical questions, for belief in God should always be based on rational reflection, so as to have a maximum of credibility and solidity.

Certainly, ideas suggesting that God might be subject to unfulfilled desires or that He might yield to some passing fancy are unacceptable, since they imply He has some incompleteness or fault, or that He is causatively determined or weak of will. However, the simple answer is that volition (in humans, and by extrapolation to an infinitely greater degree in God) is *free* – and to say that it is free is to mean that it can operate spontaneously, without mechanical connection to some reason, need, desire or whim[38].

If an Agent (a human soul or God) must have a motive to ever at all exercise will, then there is ultimately no such thing as freedom of the will. It follows that to ask the question "why did God create?" is a misrepresentation of the nature of volition. To insist for some explanation or motive for a purely volitional act is to demand a deterministic framework where none applies. The question is therefore inappropriate.

Thus, the Judaic teaching that "God created us because He wanted to do good to someone other than Himself" is reasonable and consistent. It does not imply that God is lonely, or that He yields to a sudden impulse, or the like; for such explanations would assign an inappropriate causal model to God, implying some thoughts randomly arise within Him independently of His will, and then influence or determine Him. Granting God is the most fully volitional of beings, such functioning is inapplicable to Him; His will has to be solely and entirely His own choice and responsibility, a pure expression of Himself.

We can nevertheless rationalize God's creativity ex post facto as follows. We could say that so long as His unity remains undifferentiated, His great powers of consciousness (omniscience), volition (omnipotence) and valuation (justice and lovingkindness) remain unactualized potentials – i.e. their reality is concealed. In order to give these powers their full reality, God has to decide at some point *to exercise* these powers, i.e. to actualize their potential. To do so, He has to create a diverse and changing world, creatures capable of good and bad, etc. – a world in relation to which He can not only be, but also act.

This seems to me a coherent theory. Note well that it does not affirm that God has actual consciousness, volition and valuation before he exercises these powers. There is a level or depth at which God is purely One – prior to any thought, will or intention of His whatsoever. Then at some stage, He Himself spontaneously decides to set a multiplicity in motion, starting with the creation within Himself of His own powers, and proceeding with their exercise by creating and running the world as we know it.

In this perspective, the scenario of a world having bad in it as well as good, although God was fundamentally well-meaning in creating it, is comprehensible. Good can only be exercised in a framework where bad is also possible. If good were the only polarity possible, i.e. if bad was impossible, there would be no choice of good and therefore nothing could be characterized as good (since good presupposes freewill, otherwise all you have is mechanics). Therefore, the possibility of bad had to be allowed. Obviously, God did not fear to make allowance for the bad: He trusted the good would triumph over it.

In this perspective, too, it is perfectly natural for God to both create a world *and* will it to return to its original oneness. It does not signify a "change of mind" on His part. On the contrary, it is indicative of His strength and confidence – that He can *ex nihilo* set a diverse world in motion and expect this multiplicity to ultimately return to its unitary source. No error is involved – it is all quite intentional.

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[38] See my work *Volition and Allied Causal Concepts* for a thorough analysis of freewill.

7. Methods and experiences

Another area of comparison and contrast between traditions is that of *methodology*. Comparative study of religion shows that there are many means, as well as ends and results, in common among the traditions, although distinctions can surely be made. Some meditation techniques are found in two or more traditions, while others are peculiar to one tradition. The differences are often differences in emphasis, rather than fundamental differences.

Sometimes the descriptive and prescriptive language used varies, but the essential message is the same. For instance, sitting down with a holistic awareness, a Jew might reflect and marvel at the omnipresence of God in the midst and depths of the here and now, whereas a Buddhist might view his parallel experience as a serene contemplation of the Emptiness of all things.

Thirdly, despite the underlying universality of the motive behind meditation, the so-called *mystical experiences* emerging from meditation, or occasionally apparently spontaneously, may be very different.

There are evidently strong *cultural influences* on the concrete content of experiences within the different traditions to take into account. Jews have Jewish visions, Christians have Christian visions, Moslems have Islamic visions, Hindus have Hindu visions, Buddhists have Buddhist visions, Taoists have Taoist visions, and so forth[39]. Or they respectively imagine their "visions", and think and say they saw them[40]; or they are reported by others to have seen them, even though those others cannot conceivably personally guarantee they did[41]. Moreover, there may be individual variants within the same tradition[42].

Such disagreements among and within traditions are significant, since they logically throw doubt on the finality of the mystical experiences of the parties in question. That is, through comparative religion we realize that what within a given tradition appears as universal, turns out upon further scrutiny to be culturally influenced or affected by individual parameters. But we can ignore such variations once we realize they relate to sights and sounds, i.e. to phenomenal experiences.

That is, they very likely involve *mental projections*. How else are we to explain, from a neutral standpoint, the often-conflicting narratives within competing religions? It is not inconceivable that some of the events told in the holy books actually occurred, and are not mere figments of someone's imagination; but they could not all have been real, since each religion makes some claims the others strongly doubt. Thus, without outright and blanket skepticism, philosophers are duty bound to remain cautious.

We ought perhaps to make a distinction between two kinds of mystical experience: religious experiences and meditative experiences. Religious experiences may be spontaneous, and are usually (though not always) representational: they involve concrete forms (whether they be judged real or imaginary), and they tell a story or pass a message. Meditative experiences require work to obtain, and are usually (though not always) *non-representational*: they relate to *the quality of* current perceptions or insights, rather than to their contents, or they go *beyond* content.

We must not forget that the absolute we conceive as universal is not phenomenal (i.e. made up of sights, sounds, etc.), but utterly *non-phenomenal and formless*. Mystical visions are bound to be relative to preceding ordinary experience (which seems to start through the senses, and continues in the mind through memory and imagination, and which suggests all sorts of forms that we propose by mental acts of abstraction), whereas the ultimate mystical experience of the One is necessarily unconditioned by such factors.

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[39] For examples: Saul saw the prophet Samuel, Paul saw Jesus, Mohamed saw the Archangel Gabriel, Arjuna saw Krishna, a Buddhist might see the Bodhisattva Kuan Yin and a Taoist might see Lao Tzu.

[40] We need not of course take all claims for granted offhand; we can and should exercise caution, and remain somewhat critical while also open-minded.

[41] Not having shared in the experience; or never having interviewed the one claimed to have had it.

[42] For example, the vision of the prophet Ezekiel concerning the future Temple does not match Rabbinical expectations in some details.

Thus, the apparent relativity of visions and ideas from one culture to another need not deter the individual from an optimistic spiritual quest. For one may consider that the Absolute is bound to express itself in some particular relative form, as of the moment an experience is verbally or otherwise described for purposes of communication.

For this reason, it is possible to function entirely within a chosen tradition, and still hope to transcend all relativity. One may also, in my view (as a mere philosopher), be somewhat eclectic, learning aspects of the spiritual path from different traditions, yet not allowing any to be overwhelming[43], and still reach transcendence.

Furthermore, while there are significant phenomenological differences in many of the mystical experiences generated by different traditions, it is surprising (or perhaps not so surprising) to see how many similarities there are between them. This is especially evident when the experiences involve a minimum of representation of phenomenal content or forms. As an example, I would propose the experience described in Exodus XXIV:10 – which would surely appear equally credible to a Jewish or Buddhist meditator.

All those who (claim to) have attained realization of ultimate reality agree that it is an experience that cannot be fully put into words. It is something so different from ordinary belief that it cannot be adequately described; no words can express it; no words can do it justice. We may very roughly verbally approach it, to some extent from various angles, but it is too delicate a balance of dynamic experience to be captured, frozen and passed on.

Alternatively, the choice of words that realized individuals occasionally use to signal their understanding of experience (such as *koan* formulated by Zen masters), are comprehensible only to other realized persons and quite obscure to ordinary folk like us. That is why such experience or understanding is called "a mystery" or "mystical". These are not pejorative characterizations, but simple admissions of most people's limits of comprehension.

In conclusion, meditation is ideologically neutral, although capable of differing interpretations. However we interpret meditation and whatever techniques we adopt for it, we should not forget to view it as a *natural* activity. To meditate is to be in the most natural place of all, to be what one really is at heart. It should be experienced as something essentially effortless and perfectly comfortable. It is to be at home.

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[43] It is probably easier to function entirely within a given or chosen tradition, for most people. However, those of us who are well trained in logic and philosophy find it more difficult, for we are not always readily convinced by the arguments and doctrines traditions may offer. It is undoubtedly good to have simple faith; but it is also wise to avoid being manipulated and fooled. Most exasperating of all are the doctrinaire apologists and propagandists of religions, who consider that The Truth must necessarily be exactly as formulated by their religion's founder(s). This last criticism applies equally to those of the Secularist persuasion. A healthy balance should be cultivated.

2. Understanding The Self

8. The individual self in Monism

Granting the Monist thesis briefly described in the preceding chapters, we can understand that our respective apparent individual selves, whether they are viewed as souls (entities with a spiritual substance distinct from mind and matter) or as something altogether non-substantial (as Buddhism suggests), have a relative mode of existence in comparison to the Soul of God (in Monotheistic religions), or to the underlying Original Ground of such being or the Tao (in competing doctrines).

If our selves are relative to some absolute Self (or a "Non-self", in Buddhism), they are *illusory*. In what sense, illusory? We might say that the illusion consists in artificially differentiating the particular out of the Universal – i.e. it consists in a para-cognitive somewhat arbitrary act of ***individuation***. Apparently, then, tiny fractions of the original Totality have given themselves the false impression of being cut off from their common Source. They (that is, we all) have lost touch with their true Identity, and become confused by their limited viewpoint into believing themselves to have a *separate identity*.[1]

To illustrate the illusoriness of individuation, we can point to waves in a body of water. A wave is evidently one with the body of water, yet we artificially mentally outline it and conventionally distinguish it, then we give it a name "the wave" and treat it as something else than the water. *There is indeed a bump in the water; but in reality, the boundaries we assign it are arbitrary.* Similarly, goes the argument, with all things material, mental or spiritual.

The **Buddhist** thesis on this topic is generally claimed to differ somewhat, considering that all empirical appearances of selfhood are phenomenal, and nothing but phenomenal. And since phenomena are impermanent like wisps of smoke – arising (we know not whence – thus, from nowhere), abiding only temporarily, all the while changing in many ways, and finally disappearing (we know not wither – thus, to nowhere) – we may not assume any constancy behind or beneath them. Our particular self is thus empty of any substance; and similarly, there is no universal Soul.

This thesis is of course sufficiently empirical with regard to the fact of impermanence of phenomena; but (in my view) there is a conceptual loophole in it. We can point out that it rejects any idea of underlying constancy without sufficient justification (i.e. by way of a *non-sequitur*); and we can advocate instead an underlying substance (material, mental or spiritual), with equally insufficient justification, or maybe more justification (namely, that this helps explain more things).[2]

Furthermore, we may, and I think logically must, admit that we are aware of our selves, not only through perception of outer and inner phenomena, but also through another direct kind of cognition, which we may call 'intuition', of *non-phenomenal* aspects. There is no reason to suppose offhand only phenomenal aspects exist and are directly cognizable. Indeed, we must admit intuition, to explain how we know what we have perceived, willed or valued *in particular cases*. Conceptual means *cannot* entirely explain such particulars; they can only yield generalities.

Thus, while understanding and respecting the Buddhist non-self doctrine, I personally prefer to believe in the spirituality of the individual self and in God. I may additionally propose the following arguments. To start with, these ideas (of soul and God) do not logically exclude, but *include* the notion of "emptiness"; i.e. it remains true that particular souls and the universal Soul *cannot* be reduced to phenomenal experiences.

Moreover, Monotheism is logically more convincing, because the Buddhist thesis takes for granted without further ado something that the God thesis makes an effort to explain. The manifest facts of consciousness, volition and valuation in us, i.e. in seemingly finite individuals, remain unexplained in Buddhism, whereas in the

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[1] Rather than suggest like Bishop Berkeley that we are ideas in the mind of God, the viewpoint here advocated is that we are, as it were, ideas in our own minds. God invented us, yes, and allowed for our seeming individuation; but He has no illusions about our separateness. It is we, in our limited and therefore warped perspective, who misperceive ourselves as individuals.

[2] We shall further debate the issue of impermanence later on.

Monotheistic thesis the personal powers of individuals are thought to stem from the like powers of God. That is, since finite souls are (ultimately illusory) fractions of God, their powers of cognition, freewill, and valuing (though proportionately finite) derive from the same powers (on an infinitely grander scale) in the overall Soul, i.e. God.

In truth, Buddhists could retort that though this argument *reduces* the three human powers to the corresponding (greater) powers of God, it leaves unexplained the existence of these same powers in Him. They are derivatives in humans, all right, but still primaries in God.

Yes, but a distinction remains. Monotheism views the ultimate Source as having a personality, whereas for Buddhism, the Original Ground is impersonal. For the former, there is a "Who", while for the latter, only a "What" if anything at all. It seems improbable (to me, at least) that a person would derive from a non-person. Rather, the particular soul has to have this sense of personal identity in the way of a reflection of the universal soul's personality.

But in truth, we can still intellectually reconcile the two doctrines, if we admit that such arguments are finally just verbal differentiations and that we should rather stress their convergences and complementarities.[3]

In any case, the apparent meditative success of Buddhists does not logically exclude the logical possibility that their doctrine denying soul and God may well be an error of interpretation – since other religions also report meditative successes although they resorted to other interpretations. If we generously accept all or most such human claims at their face value, we logically have to conclude that ***correct interpretation is not necessary for meditative success***.

This suggests that meditation is ultimately independent of doctrinal quarrels. Competing, even conflicting, doctrines may be equally helpful – depending on cultural or personal context. Therefore, meditation is ultimately a pragmatic issue; it does not need particular dogmas to yield its results. Whatever your religious preference, or lack of it, just add one ingredient – meditation; this single measure will over time naturally perform wonders anyway.

The modern **Secularist** denial of spiritual substance (a soul in humans and God) can be depicted as follows. We are in this case dealing with a materialist philosophy, which grants solid reality only to the phenomenal (and conceptual inferences from it). The material phenomenon is regarded as exclusive of any other, although if pressed secularists will acknowledge some sort of additional, mental substance, imagined as a sort of cloud of "consciousness" hovering in the heads of certain material entities (i.e. at least humans and possibly higher animals).

This substance is conceived as a sort of epiphenomenon of specific combinations of matter (namely, those making up a live human body, and in particular its neurological system). They effectively consider mind as a rarified sort of matter. The proponents of this thesis make no clear distinction between the stuff of memories, dreams and imaginings, on the one hand, and the one experiencing these inner phenomena and indeed (via the senses) outer phenomena, on the other. And therefore, they reject all notion of an additional spiritual substance or soul as the essence of self.

This philosophy can thus be doubted on two grounds. Firstly, it fails to clearly and honestly analyze mental experience and draw the necessary conclusions from such analysis. Notably missing is the distinction between the intuited "cognizing, willing and valuing self" and his (or her) "perceived mental (and sensory) experiences", i.e. the distinction between soul and mind within the psyche. Secondly, while secularism does tend to monism in respect of matter, it refuses a similar monist extrapolation with respect to souls, and so denies God.

Today's Secularists of course pose as "scientists"[4], and by this means give their doctrine prestige among non-philosophers and superficial philosophers. But this stance is not scientific, in the strict sense of the term. *Physical*

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[3] Needless to say, I do not intend this statement as a blanket approval, condoning all beliefs and practices included in practice under the heading of Buddhism. I have in past works for instance voiced my reserves regarding the worship directed at statues (idolatry). Even from a Buddhist point of view, this is a weird and spiritually obstructive practice (since it involves mental projection of "selfhood" into purely physical bodies). Moreover, I do not see how this can be an improvement on the worship of God. If devotion is a good thing, surely the latter is its best expression.

science has to date not produced a single mathematical formula showing the reducibility of life, mind, consciousness, or spirit/soul to matter. Materialists just *presume* that such a universal reductive formula will "someday" be shown possible. Maybe so; but until that day, they cannot logically rely on their presumption as if it were established fact.

They *think* their materialism is "sure" to be eventually proved all-inclusive – but this expectation and hope of theirs has for the moment, to repeat, no scientific justification whatsoever! It is just a figment of their imagination, an act of faith, a mere hypothetical postulate. Secularism is thus *just another religion*, not an exclusive inference from Science.

"Science" is entirely defined by rigor in cognitive method, without prejudice. It demands all available data be taken into consideration by our theories, and duly explained by these theories. Genuine philosophers are not intimidated by the intellectual thuggery of those who pretend that science is exclusively materialist.

In the case of the Materialist theory, the evident data of life, mind, consciousness and spirit or soul has hardly even been acknowledged by its advocates, let alone taken into consideration. It has simply been ignored, swept under the carpet, by them. That is not science – it is sophistry. What is speculative must be admitted to be such. And two speculations that equally fit available data are on the same footing as regards the judgment of science.

9. The impression of self

What do we mean by "**the self**"? This term refers primarily to ***that which seems to cognize, to will and to value*** at any given moment. That is, these functions seem to emanate, at any given time, from a single point or place, deep within "one's own" bodily and mental experiences, which we each call "I" or "me" or "myself".

The self is the one who is conscious, the one experiencing, the one sensing, the one feeling, the one imagining, the one conceiving and thinking, the one liking or desiring, wishing or hoping, the one taking action, etc.… or the one abstaining from such functions. Thus, the self is the Subject of consciousness, the Agent[5] of volitional acts and the Valuator of value judgments.

It is an error of observation to claim that cognitions, volitions and valuations can occur without a 'person' doing the cognizing, willing or valuing. Clear and honest observation recognizes that the distinctive nature of these events is to be relative to a self.

The self is an object of direct, subjective experience, or self-intuition, not to be confused with the phenomena due to sensation of matter or to mental experience. It is not something merely conceptually inferred from such experienced phenomena, but something *non-phenomenal* that is itself experienced.

Note well: our "I" is not a single phenomenon, or an aggregate of phenomena or even a mere abstraction from phenomenal experiences; it is an ongoing non-phenomenal experience. (It may well be, however, that the self would be transparent to itself, were it not subjected to phenomenal experiences that it has to cognize and deal with, through consciousness, volition and evaluation[6].)

The self, as here technically defined, *exists for at least a moment of time*. Logically, it does not necessarily follow from such punctual data that the selves intuited at different, even contiguous, moments of time are one and the same self. That is, the *continuity* of self is an additional, perhaps more conceptual idea – although we generally (all except Buddhists) subscribe to such subsistence.

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[4] Some are indeed scientists – in their specific field, such as Physics. But this does not entitle them to a free ride in the general field of Philosophy. I am thinking here of Hubert Reeves, who appears on TV claiming atheism as incontrovertible fact, as if any other view is simply unthinkable. Laypersons should not confuse his prestige and media-presence with logical confirmation of his view. The underlying fallacy is *ad hominem* argument.

[5] Note well, the word Agent as used here simply refers to 'the one who acts' – the actor of action, the doer of the deed. Agency here implies volition – a machine (or any other deterministic entity) is not considered an agent of its actions, except in a metaphorical way. Moreover, the colloquial connotation of agency as 'acting on behalf of someone else' is *not* intended here, though such instrumentality is logically subsumed under volitional action.

[6] The self may, in this sense, be said to be 'relative' – not meaning that (once and so long as it occurs) its existence is not 'independent', but that *its own awareness of its own existence* is dependent on external stimuli.

This in turn, note well, does not logically necessarily imply eternity since the beginning or to the end of time – although again, many (but far from all) people subscribe to this additional idea. In addition to our punctual and continuous ideas of self, note also that we think of self as something *cumulative* – our past momentary selves seem to accrete over time, making us heavier with responsibilities as we grow older.

Self-consciousness, here, note well, simply means "consciousness of self" – i.e. with reference to any reflexive act of consciousness, in which the self is both the Subject and the object, which is assumably a direct and immediate cognitive (intuitive) act. Self-consciousness can also mean consciousness (i.e. intuition, here again) of any of the three functions of the self, viz. cognition, volition and valuation.[7]

These three functions, or ways of expression, of the self do not operate independently of each other but are interrelated in various ways. They may occur simultaneously or in complex chains. Cognition is the primary function, but may also occur after volition (e.g. acts of research) and valuation (e.g. deciding what to research). Volition usually implies prior cognition, but is sometimes "blind" (whimsical). Valuation is a particular sort of volition, since it implies choice; and it always implies cognition, if only the awareness of something to evaluate (but usually also awareness of various considerations).

The above proposed definition of the self refers to the essence of selfhood. In relation to this essential self, everything else is "the world out there", "Object", "other". It is our deepest inside, deeper even than the mind and body. Aspects of mind and body are also often colloquially called self, but this is a misnomer. Self, as here understood, may therefore be equated to what we commonly call the "**soul**", without prejudicing the issue as to what such assumed entity might be construed as.

One widespread theory is that the soul is composed of some non-material, call it 'spiritual', substance. This might be hypothesized as having spatial as well as temporal location and extension, or as somehow located and extended in time but not in space[8]. Another possible way to view it is as a special sort of 'knot' in the fabric of space-time, a knot with different properties than those of so-called material entities. Some philosophers (notably, Buddhist and Materialist ones) altogether deny the soul's existence[9].

Whatever the theoretical differences between competing traditions, concerning the existence and nature of the self, they generally agree on the value and need in practice – i.e. during meditation – to forget, if not actually erase, oneself. This is of course no easy task. Certainly, at the earlier stages of meditation, when we are appalled to discover the mental storms in a teacup our ego concerns constantly produce, it seems like a mission impossible. But there are ways and means to gradually facilitate the required result.

At the deepest level, one has to eventually *give up on the Subject-Object or self-other division*. If Monism is considered as the ultimate philosophical truth, then there must indeed be a plane of reality where this duality noticeably dissolves. On a practical level, one undoubtedly cannot logically expect to reach the experience of oneness, until one has managed to surrender attachment to the common impression of duality between self and other, or Subject and Object.

Such surrender is not a psychological impossibility or an artificial mental acrobatic. This is made clear, if we reflect on the fact that the Subject-Object or self-other division constitutes *ratiocination*, i.e. a rational act[10].

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[7] The phrase "self-consciousness" is additionally sometimes used, in philosophy and science, to refer to consciousness that one is conscious of some other object – i.e. to "consciousness of consciousness". The latter might be an instant event, made possible by the Subject's dividing his attention, partly on some object and partly on his consciousness of that object; or it might involve a time-lag, assuming that the Subject is first conscious of some object, and a bit later retrospectively conscious of that first consciousness (either directly while it is still "echoing" in his mind, or indirectly through longer-term memory). Another, more colloquial and pejorative, sense of the term "self-consciousness" refers to the awareness we may have of some other person (or persons) observing us, which causes us to behave in a more awkward manner, i.e. without our customary spontaneity or naturalness, because we use our will to make sure the observer gets a certain "favorable" (in whatever sense) image of us.

[8] Or again, we might like the poet Khalil Gibran consider the soul as "a sea boundless and measureless" (*The Prophet*. London: Heinemann, 1972.)

[9] But in my opinion, they fail to adequately explain the peculiarities of cognition, volition and valuation.

[10] See my *Ruminations*, chapter 9.

Just as our 'reason' divides outer experiences into different sense-modalities, or each modality into different qualities and measures (e.g. in the visual field: colors and intensities, shapes and sizes); or again, just as it makes a distinction between outer and inner experiences (e.g. between physical sights and mental visions) – so, our rational faculty is responsible for the self-other impression. This does not have to be taken to mean that our reason is inventing a false division, producing an illusion; yet, it does mean that without the regard of a rational Subject, such distinction would never arise in the universe.

These insights imply that there is *no need* to epistemologically invalidate the Subject-Object distinction[11] to realize that we can still eventually (if only in the course of meditation) hope to be able to free ourselves in practice from this automatic reaction. We wish to at some stage give up the distinction, not because it is intrinsically wrong or bad, but because we wish to get beyond it, into the mental rest or peace of non-discriminative consciousness.

Sitting in meditation, one's "self" usually seems to be an ever present and weighty experience, distinct from relatively external mental and material experiences. But if one realizes that such self-experience is a rational (i.e. ratiocinative) product, a mental subdivision of the natural unity of all experience at any given moment, one can indeed shake off – or more precisely just drop – this sense of self, and *experience all one's experience as a unity*.[12]

Note well, the task at hand is not to *ex post facto* deconstruct the rational act of division, or reconstruct the lost unity of self and other by somehow mentally sticking or merging them together, or pretend that the Subject or the Object does not really exist. Rather, the meditator has to place his soul in the pre-ratiocinative position, where the cutting-up of experience has *not yet* occurred. It is not a place of counter-comments, but a place of no (verbal or non-verbal) comment. It is the position of pristine experience, where the mental reflex of sorting data out has not yet even begun.

All things are accepted as they appear. An impression of self appears, as against an impression of other? So well and good – it need not be emphasized or noted in any way. It is just experienced. If no distinctions are made, there are no distinctions. We remain observant, that's all. We enjoy the scenery. Our awareness is phenomenological.

In pure experience, what we call "multiplicity" may well be manifest, but it is all part and parcel of the essential "unity". Here, essence and manifestation are one and the same. Here, Subject and Object form a natural continuum. The totality is in harmony, bubbling with life. It is what it is, whatever it happens to be.

Before getting to this stage of integral experience, one may of course have to "work on oneself" long and hard.

10. Impermanence: concept and principle

Buddhist meditators attach great importance to the principle of impermanence. They consider that if one but realizes that "everything is impermanent", one is well on the way to or has already reached Realization.

However, the principle proposed by Buddhism should (in my view) be approached more critically than its proponents have hitherto done. They have taken for granted that such a principle is immediately knowable, in the way of a direct experience, and have not given enough attention to the *epistemological issues* this notion raises.

To be sure, we can and do commonly have direct experience of *some* impermanence: that of present changes. Whereas we might rationally analyze change in general (when it occurs) as an *instant* replacement of one thing by its negation, many phenomena of change evidently occur in a present *moment* (an extended amount of time). If, for example, you watch a dog running, you are not personally experiencing this sight as a series of successive stills of the dog in different positions, but as one continuous series of moves.

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[11] The Buddhists regard it invalid – but I would minimally argue that it has some credibility, like any appearance has until it is found to lead to antinomy. Indeed, I would go further and argue that any attempt at such invalidation is unjustifiable, and even logically impossible.

[12] This would of course be one aspect of overall "integration" (what is called *Samadhi* in Sanskrit, *Wu* in Chinese, *Satori* in Japanese).

A good meditation on such evident impermanence is meditation on water[13]. One sits or stands calmly in front of a body of water (the sea, a river, a lake, a puddle), watching the movements on its surface – reflections on it, waves or wavelets, currents, droplets of rain, listening to the sounds. I find this practice both soothing and a great source of understanding about life.

But we must keep in mind that the concept of impermanence covers a wider range of experiences than that: it includes changes not sensible in a present moment, but only inferred over time by comparing situations experienced in distinct moments, whether contiguous or non-contiguous. Such inferences imply a reliance on memory, or an interpretation of other present traces of past events. Still other changes are known even more indirectly, through predominantly conceptual means.

Generally speaking (i.e. including all sorts of experience under one heading): we first experience undifferentiated totality, and then (pretty much automatically) subdivide it by means of mental projections and then conceptually regroup these subdivisions by comparing and contrasting them together. Buddhist philosophy admits and advocates this analysis: the subdivision and conceptualization of the phenomenological given is, we all agree, ratiocination (i.e. rational activity); it is reason (i.e. the rational faculty) that mentally "makes" many out of the One.

It follows from this insight (we may now argue) that *impermanence cannot be considered as a primary given*, but must be viewed as derived from the imagined subdivision and conceptual regrouping of the initially experienced whole. Even to mentally isolate and classify some directly experienced particular change as "a change" is ratiocination. All the more so, the "impermanence" of each totality of experience, moment after moment, is an idea, obtained by distinguishing successive moments of experience; i.e. by relying on memory, and comparing and contrasting the experience apparently remembered to the experience currently experienced.

The latter act, note well, requires we cut up "present experience" into two portions, one a "memory" (inner) appearance and the other a more "currently in process" (inner and/or outer) appearance. This is rational activity; so, "impermanence" is in fact never directly experienced (contrary to Buddhist claims). Unity phenomenologically precedes Diversity; therefore, the experience of diversity cannot logically be considered as disqualifying the belief in underlying unity.

This argument is not a proof of substance, but at least serves to neutralize the Buddhist denial of substance. It opens the door to an advocacy of substance[14] by adductive means, i.e. in the way of a legitimate hypothesis to be confirmed by overall consideration of all experience and all the needs of its consistent conceptualization.

Note well that I am not here denying validity to the *concept* of impermanence, but I am only reminding us that "impermanence" is a concept. Being a concept based on experience of change, it is indeed a valid concept. This is true whether such change be considered as real or illusory: it suffices that such change appears phenomenologically for a concept of it to be justified.

The *principle* of impermanence is more than that the mere concept. It is a *generalization* of that concept. It is not a mere statement that change exists – it is a statement that only change exists, i.e. that everything is continually changing and there is no underlying rest. Now, s*uch a general proposition logically can simply not be validated with reference to experience alone*. There is no epistemologically conceivable way that, sitting in meditation, the Buddha would be able to *experience* this (or any other) principle *directly*.

This principle (like any other) *can indeed* conceivably be validated as universal, *but only* by adductive methodology. It must be considered as a hypothesis, to be tested again and again against all new experiences, and

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[13] The Greek philosopher Heraclites must have practiced this meditation, when he reportedly wrote "you cannot step into the same river twice". This meditation is commonly practiced, even unwittingly. Other similarly natural meditations consist in watching rain falling, wind blowing through trees, clouds shifting in the sky, candlelight flickering, or the sparks and flames of a camp or chimney fire. "Watching" of course here means, not just being aware of sights (shapes and colors), but also awareness of sounds, touch-sensations, temperatures, textures, etc.

[14] Note well that an issue within the thesis of substance is whether we advocate a single, undifferentiated substance, or a multiplicity of distinct substances. To admit of substance is not necessarily to uphold the latter, pluralist view. In Physics, the unitary substance view would be that matter is all one substance, vibrating in a variety of ways.

compared to competing hypotheses as regards explanatory value. The result is thus at best *an inductive truth*, not a pure experience or a pure deduction from experience.

Furthermore, in addition to the generalization from particular experiences of change to a metaphysical principle of the ubiquity of change, the principle of impermanence involves a second fundamental generalization. Since it is a negative principle, it involves the act of generalization inherent in all negation; that is, the generalization from "I found no permanence in my present experience" to "There was no permanence to be found in my present experience".

While the conclusion of negation by such generalization is not in principle logically invalid, *it is an inductive, not a deductive conclusion*. It stands ab initio on a more or less equal footing with the competing speculation that there might well be an underlying permanence of some sort. The latter positive hypothesis could equally well be (and sometimes is) posited as a postulate, to be gradually shown preferable to the negative assumption using adductive means.

> Even within meditation, note, constancies do appear side by side with changing phenomena, if we pay attention to them. Thus, for instance, if I meditate on water, I may reflect on the inconstancy of its surface; but I may also reflect on the underlying constancy (during my period of meditation, at least) of the horizon or shoreline, or of rocks in or around it, or simply of the fact of water, or its color and consistency, etc. I may, moreover, later discover that water is uniformly composed of H_2O.

Seen in this light, the status of the principle of impermanence is considerably less sure. To present such a principle as an absolute truth knowable directly or obtained by some sort of infallible analysis of experience would be dishonest.

All this is not said to annul the important moral lessons to be drawn from observation of impermanence. A "principle" of impermanence may still be proposed, if we take it as heuristic, rather than hermeneutic – i.e. as a useful "rule of thumb", which helps us realize that it is useless to attach importance to mundane things, and enjoins us to strive for higher values. Beauty is passing; pleasures are ephemeral. Life is short, and there is much spiritual work to be done…

With regard to predication of impermanence, it is relevant to ask whether the concrete data (experiences, appearances) referred to are phenomenal or non-phenomenal, i.e. whether they can be physically or mentally seen, heard, felt, smelt or tasted, or instead are intuited. To indicate that the data at hand is phenomenal, and so particularly transient, does not in itself exclude that relatively less transient non-phenomenal data might also be involved behind the scenes. That is, while current objects might be perceivably transient, it does not follow that the one perceiving them is equally transient.

Of course, whether the data is phenomenal or not, it may still be transient. However, transience has degrees. Data may be merely momentary, or it may appear more continuously over a more extended period of time. The issue here is not "transient or eternal", as some Buddhist philosophers seem to present it. The issue is "momentary or continuous" – with the eternal as the extreme case of continuity. It is analytically erroneous to ignore or exclude offhand periods of existence that are longer than a mere 'moment' of time and shorter than 'eternity'.

Moreover, as already pointed out, the underlying claim that all phenomena, or for that matter all non-phenomenal events, are transient is not something that can be directly observed – but can only be based on generalization. There is no *a priori* logical necessity about such ontological statements – they are epistemologically bound to be inductive. Even if all appearances experienced by me or you so far seem transient, there might still be eternal existents our own transience makes us unable to observe.

Conversely, only an eternal being could *experience* eternity – and it would take such a being… an eternity to do so (not a mere few hours, days or years of meditation)![15] This however does not exclude the possibility of

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[15] I am not sure of the truth of this statement of mine. I have in the past argued (among other reasons so as to provide an argument in favor of the doctrine that God can tell the future) that this issue hinges on the span of time an onlooker can perceive in one go. The higher one is spiritually placed, the longer a 'moment' of time covers. God, who is "above it all", at the peak of spiritual perspective, can see all time (all the things we class under the headings of past, present and future) as the present moment. Proportionately, when we humans meditate, the present is longer, i.e. the 'moment' of time our attention can include at once is enlarged. Thus, one (conceivably) need not wait forever to experience eternity, but may ultimately do so

ascribing eternity to certain things on conceptual deductive grounds. For example, I can affirm the laws of thought to be eternally true, since they are incontrovertible; or again, I can affirm all contradictions or exclusions of a middle to be eternally false.

Furthermore, Buddhists implicitly if not explicitly ascribe some sort of eternity to the existential ground in or out of which all transient phenomena bubble up. That is, although particular existents may well all be transient, the fact of existence as such is eternal. Therefore, their argument is not really intended as a denial of any permanence whatsoever (as it is often presented), but more moderately as a denial of permanence to particular existents, i.e. to fragments of the totality. And of course, in that perspective, their insight is right on.

11. Not an essence, but an entity

Buddhist philosophers have stressed the idea of impermanence, with a view to deny the existence of "essences" in both the objective and subjective domains. However, an impermanent essence is not a contradiction in terms. This means that the question of essences is more complex than merely an issue of impermanence. Several epistemological and ontological issues are involved in this question. We have indicated some of these issues in the preceding chapters.

With regard to the objective domain, comprising the material and mental objects of experience, i.e. the phenomena apparently experienced through the senses or in the mind – their reasoning is that we never perceive firm "essences" but only constantly changing phenomena; whence, they conclude, the objects we refer to are "empty".

In reply, I would say that it is true that many people seem to imagine that the "entities" we refer to in thought (e.g. a dog) have some unchanging core (call it "dog-ness"), which remains constant while the superficial changes and movements we observe occur, and which allow us to classify a number of particulars under a common heading (i.e. all particular dogs as "dogs").

But of course, if we examine our thought processes more carefully, we have to modify this viewpoint somewhat. We do "define" a particular object by referring to some seemingly constant property (or conjunction of properties) in it – which is preferably actual and static, though (by the way) it might even be a habitual action or repetitive motion or a mere potential.

Note too, there may be more than one property eligible for use as a definition – so long as each property is constant throughout the existence of that object and is exclusive to it. The defining property does not shine out as special in some way, and in some cases we might well arbitrarily choose one candidate among many.

However, defining is never as direct and simple an insight as it may at times seem. It requires a complex rational activity, involving comparison and contrast between different aspects and phases of the individual object, and between this object and others that seem similar to it in some respects though different from it in others, and between that class of object and all others. Thus, the property used as definition is knowable only through complex conceptual means.

Therefore, our mental separation of one property from the whole object or set of objects is an artifice. And, moreover, our referring to all apparently similar occurrences of that property as "one" property gives the impression of objective unity, when in fact the one-ness is only in the mind of the beholder (though this does not make it unreal). In short, the definition is only an abstraction. It indeed in a sense exists in the object as a whole, but it is only distinguishable from the whole through cognition and ratiocination.

The material and mental objects we perceive are, therefore, in fact nothing other than more or less arbitrary collections of phenomena, among which one or more is/are selected by us on various grounds as "essential". The

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through spiritual elevation. This may be the "eternal now" experience many people have reported having. Note additionally that, if we accept this hypothesis, we have to apply it not only to external events (i.e. phenomenal physical and mental experiences) but also to inner experience (i.e. intuitions of cognitions, volitions and valuations by self). The latter is more difficult, more problematic, because it implies that *one's own* being and experience is already consumed, i.e. all telescoped into the present. Still, why not.

"essence" is a potential that can only be actualized relative to a rational observer; it has no independent actual existence when no observer is present. Definition gives us a mental "handle" on objects, but it is not a substitute for them.

An entity is not *only* its definition. An entity is the sum total of innumerable qualities and events related to it; some of these are applicable to it throughout its existence (be that existence transient or eternal) and some of them are applicable to it during only part(s) of its existence (i.e. have a shorter duration). Although the defining property must be general (and exclusive) to the object defined, it does not follow that properties that are not or cannot be used for definition cease to equally "belong to" the object.

It is inexcusably naïve to imagine the essence of an entity as some sort of ghost of the object coterminous with it. In fact, the entity is one – whatever collection of circumstances happens to constitute it. The distinction of an essence in it is a pragmatic measure needed for purposes of knowledge – it does not imply the property concerned to have a separate existence in fact. The property selected is necessarily one aspect among many; it may be just a tiny corner of the whole entity.

We may thus readily agree with Buddhists that named or thought-of objects are "empty"; i.e. that it is inaccurate to consider each object as really having some defining constant core, whether phenomenal or non-phenomenal. But the Buddhists go on from there are apply the same reasoning to the Subject (or soul) – and this is where we may more radically disagree.

They imply that the Subject of cognitions is itself cognized by way of phenomena, i.e. like any other object. This idea of theirs has some apparent credibility due to the fact that they confuse the Subject with his 'inner', mental phenomena[16]. But though such phenomena are indeed internal *in comparison to* physical phenomena sensed in the body or further out beyond it, they are strictly speaking external in comparison to the "soul".

Anyone who reflects a little would not regard, say, the stuff of a dream he had as himself. His self-awareness is the consciousness of something more inward still than the stuff of imaginations. He is the one experiencing and generating the imaginations. The soul is not a phenomenon – it has no smell, taste, solidity, tune or color; it is something *non*-phenomenal.

The self is not perceived as an object in the way of mental phenomena (as the Buddhists suggest), but is intuited directly in the way of a Subject apperceiving itself (at least when it perceives other things, or when it expresses itself through volition or valuation). Our soul is not a presumed "essence" of our mental *phenomenal* experiences; it is an entirely different sort of experience.

Of course, it could still be argued that – even granting that acts of cognition, volition and valuation are non-phenomenal events, known by self-intuition – such acts are mere momentary events, which do not necessarily imply an underlying non-phenomenal continuity (an abiding self). Admittedly, the fact that we cannot physically or mentally see, hear, smell, taste or touch the acts of the self does not logically imply that the self is abiding.

However, note that this last is an argument in favor of the possibility that the self may be impermanent – it does not constitute an argument against the existence of a self (whether lasting or short-lived) underlying each act of cognition, volition or valuation. That is, these functions are inconceivable without *someone* experiencing, willing and choosing, even if it is conceivable that the one doing so does not abide for longer than that moment.[17]

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[16] See the Buddhist doctrine of the Five Component-Groups. In this doctrine, the fourth and fifth groups, comprising the "determinants" and the "cognitive faculty", are particularly misleading, in that cognition, volition and valuation, the three functions of the self, are there presented without mention of the self, as ordinary phenomenal events. That is, the doctrine commits a *petitio principii*, by depicting psychic events in a manner that deliberately omits verbal acknowledgment of the underlying self, so as to seem to arrive at the (foregone) conclusion that there is no self. No explanation is given, for instance, as to how we tell the difference between two phenomenally identical actions, considering one as really willed by oneself, and the other as a reactive or accidental event – for such differentiation (which is necessary to gauge degrees of responsibility) is only possible by means of self-knowledge, i.e. introspection into one's non-phenomenal self, and they have dogmatically resolved in advance not to accept the existence of a cognizing, willing and valuing self.

[17] Note well that I am careful to say the *possibility* that the self is impermanent; which does not exclude the equal possibility that the self is permanent. The mere fact that the cognitions, volitions and valuations of the self are impermanent does not by itself allow us to draw any conclusion either way about the permanence or impermanence of the self. Additional considerations are needed to draw the latter conclusion.

To deny that cognition, volition and valuation necessarily involve a self is to place these apparent events under an aetiological régime of natural determinism or spontaneity. That subsumes willing under mechanistic causation or chance happenstance – i.e. it effectively denies the existence of freewill.

Similarly, it implies that there is no more to knowing than the storing of symbols in a machine (as if the "information" stored in a computer has any knowledge value without humans to cognize and understand it, i.e. as if a computer can ever at all *know*). And again, it implies that valuing or disvaluing is no more relevant to a living (and in particular sentient) being than it is to a stone.

The effective elimination of these three categories (i.e. knowing, willing and valuing) by Buddhists (and extreme Materialists, by the way) is without logical justification, because in total disaccord with common experience.

The confusion may in part be caused or perpetuated by equivocation. Because we often use the word "mind" – or alternatively, sometimes, "consciousness" – in a loose, large sense, including the soul, it might be assumed that the soul is similar to mental phenomena in its substance. But the soul and mind are only proximate in a spatial sense, if at all. The soul is not made of mental stuff or of consciousness – the soul uses consciousness to observe mental and physical events (and, indeed, its intimate self).

The self or soul is not an abstraction from mental or physical phenomena. It receives and cognizes mental and material information (and it indirectly chooses and wills mental and material events) – but it is not identical with such information (or events).

Only intuited events of cognition, volition and valuation can be considered as truly parts of, and direct responsibilities of, the soul. And even here, it would be inaccurate to necessarily equate the soul to these functions. Such a positivistic approach is a hypothesis to be adopted inductively only if we find no good reason to adopt the alternative hypothesis that the soul is more than the evidence of its functioning.

Thus, the inevitable impermanence of the phenomenal world cannot be construed as necessarily implying a similar impermanence for the self. Even granting that material and mental objects are "empty", it does not follow that the self is a non-entity, i.e. non-existent as a distinct unit. The self is not a material or mental substance or entity – but it is a non-phenomenal substance and entity. We may legitimately label that distinct substance 'spiritual' and that entity 'soul'.

Note well that such labeling does not preclude the idea, previously presented, that the individual soul's individuation out from the universal spiritual substance or universal soul is ultimately illusory. We may thus well consider the soul as impermanent in its individuality, while regarding its spiritual substance as eternal.

Upon reflection, this is pretty much the way we view the phenomenal realm, too – as consisting of impermanent illusory individual entities emerging in a permanent real universal substratum. Their illusoriness is mainly due to the conventionality of their individual boundaries.

At this stage, then, we find ourselves with two 'monistic' domains – the one giving rise to material and mental phenomena and the other giving rise to spiritual entities (souls). Obviously, such double 'monism' is not logically coherent! We therefore must assume that these two apparently overlapping domains are really ultimately somehow one and the same.

So, we have perhaps come full circle, and our opinions end up pretty much coinciding with the Buddhists' after all. We ought perhaps to lay the stress, instead, on our difference with regard to *continuity*.

According to Buddhist theory, the self has no continuity, i.e. our self of today is not the same person as our self of yesterday or of tomorrow. In this perspective, they are causatively *connected*, in the sense that earlier conglomerations of phenomena constituting a self 'cause' later ones – but there is no *thread of constancy* that can be identified as the underlying one and the same entity. It is not a case of mere succession of totally discrete events; but there is no essential identity between the events, either.

However, many (myself included) object to this theory on various grounds. While we may admit that one can logically regard selfhood (i.e. being a Subject and Agent) as punctual at every instant without having to assume its extension over a lifetime, we must realize that such an assumption removes all logical possibility of a concept of moral responsibility for past actions.

If one is no longer ever the same person as the person committing a past virtuous or vicious act, then no good deed may be claimed by anyone or rewarded, and no crime may be blamed on anyone or punished. Ex post facto, strictly speaking, the doer of any deed no longer exists. Similarly, looking forward, there is nothing to be gained

or lost by any Agent in doing anything, since by the time any consequences of action emerge the Agent has already disappeared.
In such a framework, all personal morality and social harmony would be completely destroyed. There would be no justification for abstaining from vice or for pursuing virtue. Even the pursuit of spiritual realization would be absurd. Of course, some people do not mind such a prospect, which releases them from all moral obligations or responsibility and lets them go wild.
It is very doubtful that Buddhism (given its overall concerns and aims) supports such a nihilist thesis[18]. In any case, such a viewpoint cannot be considered credible, in the light of all the above observations and arguments.

12. Distinguishing the ego

The self was above defined – from a philosophical perspective – as *the apparent Subject of cognition and Agent of volition and valuation*. But – in common parlance – most people identify themselves with much more than this minimal definition. To clarify things, it is therefore useful to distinguish two meanings of the term.
In its purest sense, the term self refers to what is usually called the soul or person. In a colloquial sense, the term is broader, including what intellectuals refer to as "the **ego**". The latter term – again from a philosopher's point of view – refers to the material and mental phenomena, which indeed seem rightly *associated with* our self, but which we wrongly tend to *identify with* it. Thus, by the term ego we shall mean all aspects of one's larger self *other than* one's soul; i.e. all extraneous aspects of experience, commonly misclassified as part of oneself.
This is just a way to recognize and emphasize that we commonly make errors of identification as to what constitutes the self[19]. If we try to develop a coherent philosophical system, looking at the issues with a phenomenological eye, we must admit the self in the sense of soul (i.e. Subject/Agent) as the core sense of the term. The latter is a non-phenomenal entity, quite distinct from any of the material and mental phenomena people commonly regard as themselves.
We tend to regard our body, including its sensory and motor faculties, as our self, or at least as part of it. But many parts of our body can be incapacitated or detached, and we still remain present. And, conversely, our nervous system may be alive and well, but we are absent from it. So, it is inaccurate to identify our self with our body.
Nevertheless, we are justified in associating our self with our body, because we evidently have a special relationship to it: we have more input from it and more power over it than we do in relation to any other body. Our life takes shape within the context of this body. For this reason, we call it 'our' body, implying possession or delimitation.
With regard to the mind, a similar analysis leads to the same conclusion. By 'mind', note well, I mean only the apparent mental *phenomena* of memory and imagination (reshufflings of memories), which seem to resemble and emerge from the material phenomena apparently experienced through the body (including the body itself, of course). Mind is not a Subject, but a mere (non-physical) Object; a mind has no consciousness of its own, only a Subject has consciousness.

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18 Although the Buddhist philosopher Nagarjuna seems to relish it.

19 The word 'ego' originally, in Latin, meant 'I'. Nowadays, in English, it is commonly understood in the pejorative sense used by me in the present essay. I do not subscribe to the sense used in psychoanalytic theory, which presents the ego as a segment of the psyche "mediating between the person and reality". Such a notion is to me conceptually incoherent, since it ascribes a separate personality (i.e. selfhood) to this alleged segment, since to "mediate" anything implies having cognitive, volitional and evaluative powers. The ego of psychoanalysts involves a circularity, since it raises the question: who or what is mediating between the person and reality, and on what basis? The common sense of 'ego' is, I would say, closer semantically to the 'id' of psychoanalysis.

This limited sense of mind is not to be confused with a larger sense commonly intended by the term, which would include what we have here called soul. I consider this clarification of the word mind very important, because philosophies "of mind" in which this term is loosely and ambiguously used are bound to be incoherent[20].

The term I use for the conjunction of soul and mind is 'psyche'. Of course, below the psyche, at an unconscious level, lies the brain or central nervous system, which plays a strong role in the production of mental events, although it is not classed as part of the psyche but as *part of the body*. Some of the items we refer to as 'mind' should properly be called brain.

> The term "unconscious mind", note well, refers to *potential* (but not currently actual) *items of consciousness stored in the brain* (and possibly the wider nervous system); for example, potential memories. Such items are called mind, only insofar as they might eventually appear as mental objects of consciousness; but strictly speaking, they ought not be called mind. The term "unconscious mind" is moreover an imprecision of language in that the mind is never conscious of anything – it is we, the Subjects, who are conscious of mental items (mental equivalents of sensory phenomena, as well as ideas and emotions).

Thus, mind refers to a collection of evanescent phenomena, without direct connection between them, which succeed each other in our 'mind's eye' (and/or 'mind's ear') but which lack mental continuity, their only continuity being presumably their emergence from the same underlying material brain. The mind cannot be identified with the self, simply because mental events are experienced as mere objects of consciousness and will, and not as the Subject and Agent of such psychical events. Moreover, the mind may momentarily stop displaying sights or sounds without our sense of self disappearing.

Nevertheless, our mind is ours alone. Only we directly experience what goes on in it and only we have direct power over its fantasies. Even if someday scientists manage to look into other people's private minds and find ways to affect their contents, one person remains in a privileged relationship to each mind. It is therefore proper to call our minds 'ours', just as we call our bodies 'ours'.

Thus, the self, in the colloquial sense, is a collection of three things: soul, mind and body – i.e. spiritual, mental and material experiences. But upon reflection, only the soul counts as self proper – the ego, comprising mind and body, is indeed during our whole lifetime "associated with" our strict self (that is, soul), but it should not be "identified with" that self. The ego is merely an appendage to the self or soul, something 'accidental' (or at best 'incidental') to it.

However, this should not be taken to mean that the soul has no share in the ego. Many of the physical and mental traits that comprise the ego are at least in part due to past choices and actions of the soul. The soul is thus somewhat responsible for much of the ego; the latter is in effect a cumulative expression of the former. Some people have big, mean egos, to their discredit; others have smaller, nicer egos, to their credit. Moreover, the soul tends to function in the context of the ego or what it perceives as the ego.

In more narrow psychological terms, the ego is a particular self-image one finds motives for constructing and clinging onto. It is a mental construct composed of images selectively drawn from one's body and mind – some based on fact, some imaginary. Compared to the real state of affairs, this self-image might be inflationary (flattering, pretentious) or it might be depreciative (undemanding, self-pitying). Ideally, of course, one's self-image ought to be realistic; i.e. one must at all times strive to be lucid.

13. Dismissing the ego

On a practical level, such insights mean that what we regard as our "personal identity" has to be by and by clarified. We gradually, especially with the help of meditation, realize the disproportionate attention our material and mental experiences receive, and the manipulations we subject them to.

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[20] Equivocal use of the term mind leads some philosophers into syllogistic reasoning involving the Fallacy of Four Terms, in which the middle term has different senses in the major and minor premises, so that the conclusion is invalid.

Because of the multiplicity and intensity of our sensory and mental impressions, we all from our birth onwards confuse ourselves with the phenomena impinging upon us. Because they shout so loudly, dance about us so flashily, weigh upon us so heavily, we think our experiences of body and mind are all there is, and we identify with them. To complicate matters further, such self-identification is selective and often self-delusive.

It takes an effort to step back, and realize that body and mind phenomena are just fleeting appearances, and that our self is not the phenomena but the one experiencing them. Even though this self is non-phenomenal (call it a soul, or what you will), it must be put back in the equation. *We may associate ourselves with our bodily and mental phenomena, but we must not identify with them*. There is no denying our identity happens to currently be intimately tied up with a certain body, mind, social milieu, etc. – but this does not make these things one and the same with us.

Gradually, it becomes clear that our personal confusion with these relatively external factors of our existence is a cause of many of the difficulties in our relation to life. We become attached to our corporeality or psychology, or to vain issues of social position, and become ignorant as to who (and more deeply, Who) we really are.

To combat such harmful illusions, and see things as they really are, one has to "work on oneself". One must try and diminish the influence of the ego.

Specifically, one has to overcome the tendencies of egotism and egoism. Egotism refers to the esthetic side of the ego, i.e. to our narcissistic concerns with appearance and position, our yearning for admiration and superiority and our fear of contempt and inferiority. Egoism refers to the ethical side of the ego, i.e. to our material and intellectual acquisitiveness and protectionism.

The issue is one of degree. A minimum of self-love and selfishness may be biologically necessary and normal, but an excess of those traits are certainly quite poisonous to one's self and to others. Much daily suffering ensues from unchecked ego concerns. Egotism produces constant vexation and resentment, while egoism leads to all sorts of anxieties and sorrows.

On this point, all traditions agree: no great spiritual attainment is possible without conquest of egocentricity. Self-esteem and self-confidence are valuable traits, but one must replace conceit with modesty and arrogance with humility. Meditation can help us tremendously in this daunting task.

Of course, *it is none other than the self (i.e. soul) who is egocentric!* The ego is not some other entity in competition with the soul in a divided self, a "bad guy" to pour blame on. We have no one to blame for our psychological failings other than our soul, whose will is essentially free. ***The ego has no consciousness or will of its own: it has no selfhood.***

The ego indeed *seems to* be a competing self, because – and only so long as and to the extent that – we (our self or soul) identify with it. It is like an inanimate mask, which is given an illusion of life when we confuse our real face with it. But we should not be deluded: it is we who are alive, not the mask.

Rather, the body and mind (i.e. the factors making up the ego) are mechanistic domains that strongly *influence* the soul in sometimes negative ways. They produce natural inclinations like hunger for food or the sex drive or yearning for social affiliation, which are sometimes contrary to the higher interests of the soul. For this reason, we commonly regard our spiritual life as a struggle against our ego inclinations.

Not all ego inclinations are natural. Many of the things we think we need are in fact quite easy to do without. As we commonly say: "It's all in the mind". In today's world, we might often add: "It is just media hype" for ultimately commercial or political purposes. People make mountains out of molehills. For example, some think they cannot make it through the day without a smoke or a drink, when in fact it is not only easy to do without such drugs but one feels much better without them.

Often, natural inclinations are used as pretexts for unnatural inclinations. For example, if one distinguishes between natural sensations of hunger in the belly and the mental desire to titillate one's taste buds, one can considerably reduce one's intake of calories and avoid getting painfully fat. Similarly, the natural desire for sex for reproductive purposes and as an expression of love should not be confused with the physical lusts encouraged by the porno industry, which have devastating spiritual consequences.

Thus, the struggle against ego inclinations ought not be presented as a struggle against nature – it is rather mostly a fight against illusions of value, against foolishness. It is especially unnatural tendencies people adopt or are made to adopt that present a problem. It is this artificial aspect of ego that is most problematic. And the first victory in this battle is the realization: "this is not me or mine".

Once one ceases to confuse oneself with the ego, once one ceases to regard its harmful inclinations as one's own, it becomes much easier to neutralize it. There is hardly any need to "fight" negative influences – one can simply ignore them as disturbances powerless to affect one's chosen course of action. The ego need not be suppressed – it is simply seen as irrelevant. It is defeated by the mere disclosure of its essential feebleness.

Meditation teaches this powerful attitude of *equanimity*. One sits (and eventually goes through life) watching disturbances come and go, unperturbed, free of all their push and pull. The soul remains detached, comfortable in its nobility, finding no value in impure forces and therefore thoroughly uninfluenced by them.

This should not, of course, be another "ego trip". It is not a role one is to play, self-deceitfully feeding one's vanity. On the contrary, one experiences such meditation as "self-effacement" or "self-abnegation", as if one has become transparent to the disturbances, as if one is no longer there to be affected by them.

This is, more precisely put, ego-dismissal, since one has ceased to identify with the forces inherent in the ego. Such dismissal should not, of course, be confused with evasion. It is abandonment of the foolish psychological antics – but this implies being very watchful, so as to detect and observe them when they occur.

There is no need for difficult ascetic practices. One has to just become more aware and sincerely committed; then one can nimbly dodge or gently deflect negative tendencies that may appear. Being profoundly at peace, one is not impressed by them and has no personal interest in them.

Many people devote much time and effort to helping other people out materially or educationally. This is rightly considered as an efficient way to combat self-centeredness, although one should always remain alert to the opportunities for hidden egotism and egoism such pursuits offer.

Granting Monism as the true philosophy, it would seem logical to advocate 'altruism' as the ultimate ethical behavior. However, this moral standard is often misunderstood to mean looking out for the interests of others while ignoring one's own interests. Such a position would be simplistic if not dishonest. If we are all one, the all-one includes and does not exclude oneself.

Thus, I would say that whilst altruistic behavior is highly commendable and admirable, working on oneself first and foremost would seem a very necessary adjunct and precondition. Conceivably, when one reaches full realization, one can pretty well forget oneself altogether and devote oneself entirely to others – but until then one must pay some attention to one's legitimate needs, if only because one is best placed to do so.

14. Relief from suffering

Many people look to meditation as a momentary oasis of peace, a refuge from the hustle and bustle of the world, a remedy against the stresses and strains of everyday living. They use it in order to get a bit of daily peace and calm, to get 'centered' again and recover self-control, so as to better cope with their lives. Even so, if they practice it regularly, over a long enough period, for enough time daily, they are sure to discover anyway its larger, more radical spiritual benefits.

One general goal of meditation we have not so far mentioned is relief from suffering. We all to varying degrees, at various times of our lives, experience suffering – and nobody really likes it[21]. The wish to avoid or rid oneself of suffering is often the primary impulse or motive for meditation, before we develop a broader perspective (like "spiritual development", for instance) relating to this practice.

Thus, "liberation" is often taken to at first mean "liberation from suffering", before it is understood as "liberation from restraints on the will". These two interpretations are not as opposed as they might seem, because suffering is *a negative influence on volition*, so when we free ourselves of the former, we experience the latter's release. Contentment, the antithesis of suffering, implies a smoothly flowing life.

> The relation between meditation and relief from suffering is not always simple and direct. Although it is true that over time meditation renders one immune to many disturbances, it may first for awhile make us

[21] Not even masochists, who use one kind of pain as a palliative against another kind of pain. For instance, they might pursue physical pain to avoid having to face some sense of guilt or to forget some unpleasant childhood experience.

much more sensitive to them[22]. When we are more unconscious, our faculties function in coarser ways, so we feel less. As we refine our faculties, and become more conscious, we naturally feel more clearly. For this reason, a meditator may even on occasion find inner peace a bit scary and build a resistance to it, like someone who gingerly avoids a surface he suspects has a static electricity charge[23]. Peace, too, takes getting used to.

Suffering should not be confused with pain, but rather refers to our psychological response to feelings of pain. Some people cannot handle felt pain at all; whereas some, though they feel the same pain, do not take it to heart as much. Moreover, suffering refers not only to experienced pain, but may refer to lack of pleasure; i.e. to the frustration of not getting pleasure one wished for or expected, or of having lost pleasure one had for a while.

All this of course concerns mental as well as bodily pain or pleasure. Pain or pleasure may be felt as a purely physical sensation (e.g. a burnt finger or a pang of hunger); or as a visceral sentiment occurring in the body but having a mental cause (e.g. cold fear in the belly or warm love in the chest); or again, as a purely mental experience (e.g. a vague feeling of depression or elation).

Suffering primarily refers to actual pain; but it often refers to remembered or anticipated pains. For example, one may suffer for years over a bad childhood experience; or again, one may suffer much in anticipation of a big and difficult job one has to do soon. Suffering can also relate to abstract or conceptual things, whether past, present or future. For example, one might suffer at the general injustice of life. In all such cases, however, some present concrete negative feelings are felt, and the suffering may be taken to refer to them.

Buddhist teaching has the fact of human suffering at its center. This is made evident in the Four Noble Truths taught by the founder of this religion, viz.: (1) that life is suffering, i.e. that suffering of some kind or another is inevitable in the existence of sentient beings like ourselves; (2) that such suffering has a cause, namely our *attachments* to things of this world, our desire for pleasures and aversion to pains; (3) that we can be rid of suffering, if we rid ourselves of its cause (attachment); and finally, that the way to be rid of suffering is through the Eightfold Path.

The latter list of means includes meditation, as a very effective tool for discovering one's attachments and the ways to break away from our addiction to them. Just as soon as one begins to practice meditation, one discovers its power to make us relatively indifferent to pain or lack of pleasure – i.e. to make us suffer less readily and intensely.[24]

Buddhists argue, additionally, that the ultimate obstacle to freedom from suffering is belief in a self – for to have a self is to have *particular interests*, and therefore to experience pain when these interests are frustrated (as is inevitable sooner or later) and pleasure when they are (momentarily) satisfied. It follows, in their view, that liberation from suffering (the third Noble Truth) would not be conceivable, if the "emptiness" of the self were not advocated. For only a 'non-self' can be free from the blows inherent to an impermanent world like ours.

However, I beg to differ from this doctrine, not to categorically reject it, but to point out that an alternative doctrine is equally possible. We could equally argue, from a Monotheistic point of view, that when the individual soul dissolves back in the universal Soul, which is God, it is conceivably free from all subjection to the vagaries of this material-mental world. The illusion of individuation, rather than the alleged illusion of selfhood, may be considered a sufficient cause of liability to suffering; and the removal of this cause may suffice to remove suffering.

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[22] A meditator may barely notice a sudden loud noise like an explosion, yet find "music" like rock or techno (with very few mellow exceptions) utterly unbearable! In contrast to a non-meditator, who might jump up with fright at the explosion, yet find supermarket canned music relaxing.

[23] Such resistance has been called "the dread of enlightenment". In fact, most people who have heard of meditation but have never dared to try it have this dread. They think that they will somehow get lost and drowned in the sea of enlightenment. Indeed, they will do so – in the sense that they will lose their individuality. But what must be understood is that this prospect is not frightful but cause for elation.

[24] In yoga, they teach an attitude called *pratyahara*, which consists in focusing clearly on pain one is feeling, calmly assessing its exact extent and intensity; after awhile, a pain thus stared at tends to disappear or at least it feels less urgent. This is, then, a sort of detachment from or transcendence of pain – not through avoiding it, but by facing it.

Again I emphasize: the debate about the self is theoretical and does not (in my view) affect the effectiveness of meditation.

The practical lesson to draw from the Buddhist teaching is the importance of 'attachment' in human psychology. This realization, that the root of suffering is the pursuit of supposed pleasures, or avoidance of pains, is central. Anxiety, frustration, vexation, anger, disappointment, depression – such emotions are inevitable under the regime of attachment, in view of the impermanence of all mundane values.

If worldly pleasure of any sort is pursued, pain is sure to eventually ensue. If the pursuit of pleasure is successful, such success is necessarily short-lived, and one is condemned to protect existing pleasure or pursue pleasure again, or one will feel pain at one's loss. If the pursuit of pleasure is unsuccessful, one experiences the pain of not having gotten what one wanted, and one is condemned to keep trying again and again till successful. Similarly, the avoidance of pain is a full time job with no end in sight – a pain in itself.[25]

It is therefore wise to steer clear of attachment, and develop a more aloof approach to the lower aspects of life. This not only saves one from eventual suffering, but releases one's energies for the pursuit of lasting spiritual values.

Meditation helps us (the self, the soul) to objectify and thus transcend the feelings experienced in body and mind. This can be understood by contrasting two propositional forms:

(a) "I feel [this or that feeling]", and

(b) "I am experiencing [having a certain body-mind feeling]".

These two sentences might be considered superficially equivalent – but their different structure is intended to highlight important semantic differences. In (a), the subject "I" is a vague term, and the verb and its complement are taken at face value. In (b), the subject "I" is a more specific term, and the verb and complement are intended with more discrimination.

In (a), the subject considers the act of feeling a feeling as its own act, an extension of itself. In (b), the subject lays claim only to the cognitive fact of experiencing, considering all else as mere object relative to this exclusively cognitive act. The sense of "I" is therefore clearly different in the two sentences: in (a), the ego is meant, whereas in (b) it is the self or soul that is meant.

This is to illustrate that to transcend feelings, we have to objectify them, and more precisely identify our "I" or self with our spiritual dimension (or soul) rather than with our body and mind.

[25] Suffering takes many intricate or convoluted forms. Consider for instance the frustration of a rich man, who already has everything he could possibly need or want, and so finds nothing new to spend his money on. He is not free of material attachments, he has the necessary material means, but the world has nothing more or new to offer him. This is a danger of riches – because the tendency in such situations is to turn to new, more and more perverse, sensations.

3. Some Behavioral Disciplines

15. Taking up the challenge

People without a spiritual life are comparable to walking dead; they are like busy empty shells. They have a body and mind, for which they work in many ways; but it is as if they have no soul, since they devote almost no energy to it. It is only when one lives a spiritual life, a life filled with more and more spiritual concerns, that one can be truly said to be alive. Try it, and you will understand.

Once one has desired and resolved to attain one's fullest potential realization[1], one should go about doing whatever is necessary or useful to that end, and not dither or indulge in conflicting or useless pursuits. One should strive with determination, intelligence and discipline.

The seeker has to take personal responsibility for his or her enlightenment and liberation. Do be open to and indeed look for spiritual guidance, but fundamentally be your own "guru" (wise teacher).

It is important to realize that life is short and the work to be done is long. When one is young, one generally has the impression that there is plenty of time left to one to do what has to be done, and one thinks one has time to indulge a little (or a lot). As one passes middle age, and looks back, one realizes how quickly time flies and how much time one wasted for nothing worth anything. And as one reaches an older age, one is very sorry one did not make the required effort when one was younger and much stronger.

And of course, none of us knows how quickly he or she will die. It could be today, tomorrow, this week, this month, this year, within a few years… no one knows. We are all like a flower: first a bud, then a fresh, tender unfolding of beauty, then we wither away, never to be seen again.

A good image of the spiritualizing process is that of a baby in the womb. The womb symbolizes 'this world' (i.e. the material world), and outside the womb is 'the next world' (i.e. the spiritual world). Just as a baby in the womb gradually forms and grows, in preparation for its exit into a more independent existence, so does our spiritual work prepare us for 'death' from this world and 'birth' in the next one. Spirituality facilitates our transition.

With regard to the quality of volitional response required, a general recommendation I would make is: rather use "smooth will" than "rough will". Our will is rough when we try to use "force" to effect change, i.e. when we act in a relatively unconscious manner, without accurate aim, wasting energy. Smooth will is the opposite approach – it is "thoughtful", quiet strength, masterfully applied how, where and when appropriate, for as long as necessary.

> We can illustrate the difference with reference to fighting. The less experienced fighter throws punches wildly, blindly, hoping one will perchance land successfully. The winning fighter calmly waits for an actual opening, and aims his blows precisely; he sticks to his opponent and shoves him off with just the required amount of power, following up on his advance till the job is fully done.

I do not propose to write a guidebook for spiritual seekers. I do not consider myself sufficiently qualified. I would just be repeating what many other people have said or written in all the traditions. Moreover, there is so much to say, so many details to mention, that the task is in truth infinite.

Nevertheless, I would like to make some remarks relevant to the current cultural situation. Present-day society, under the influence of educators, media and politicians who pander to the lowest impulses of people, has swerved very visibly (in the space of my own lifetime) to the side of utter shallowness and moronic hedonism. I would like to here respond to some aspects of this onslaught, and offer readers some advice.

Whoever is sincerely interested in meditation, has to adopt a lifestyle favorable to it. This may not be found easy at first. There are many bad habits to break, but with sustained intelligent effort, it is quite feasible.

In fact, little effort is necessary other than continued, regular meditation practice – more and more daily. Because, as one advances in meditation, one's behavior tends to naturally align itself with the level of consciousness it produces. Things that seemed valuable before simply cease to impress us so much, and they fall by the wayside by themselves.

Still, some personal determination is needed – or one risks losing the treasure of meditation. One has to have character to move forward.

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[1] A posture Buddhists call "*boddhicitta*".

16. Face facts with equanimity

A first step in spiritual work is to look upon one's present "life situation" as a given – i.e. to accept it as stands, without whining and complaining as to how "the cards were dealt out". This is not an attitude of fatalism, because the intent is to improve on that situation. It is just a realization that any situation one finds oneself in at any time is mere landscape, mere theatrical *décor* around the play of one's life, which is essentially an *internal* play. Things and people around one are only stage sets and supporting cast – the inner drama is what counts.

In particular, one should not allow oneself to be distracted or distressed by people and events in the surrounding world one perceives as stupid or evil, to the extent that one's spiritual work is considerably hampered or blocked. Meditation requires and fosters equanimity and serenity; if this is indifference, it is born of perspective rather than narrow-mindedness. If we were in "nirvana" instead of "samsara", there would be no need for spiritual development.

It is silly to waste precious time and energy on resentment. We have to view the world we happen to find ourselves in as a given – *this world is by its very nature* (as a multiplex, with changing and interacting particulars) *an imperfect world with imperfect people*. It is useless to get sad or angry at situations or people; things and people are what they are. Once these facts are acknowledged and accepted, rather than evaded or rejected, one can begin to act (mostly on oneself) to change things for the better.

Whatever one's situation – whether one is healthy or sick, surrounded or alone, free or enslaved, rich or poor, employed or jobless, married or single, etc., etc. – one will always be called upon by life to exercise certain virtues, like courage, effort, perseverance, purity, strength, kindness, integrity, and so on. A rich person seems to have it easier than a poor one – but poverty may in fact facilitate certain virtues whereas riches make them more remote; similarly, in all other cases.

Life makes the same *moral demands* on all of us, and changing the surrounding scenery makes no difference to the basic challenge involved. It is useless to shake one's fist at God, or to envy or blame other people, for one's present condition. One should regard one's current situation (whatever it be) as *the best possible context and framework* for the virtues one spiritually needs to exercise right now.

One must see that the situation one happens to be in provides the ideal opportunity for the currently needed virtues. One can view it as "God's will" or as "one's karma"; but in any case, as the best place to be for one's spiritual progress. With this realization, one can face one's situation with gratitude and optimism, and deal with its difficulties with energy and even relish.

> I recently had a very strong direct experience of detachment. It was after a full day of fasting and prayer (Yom Kippur), including periods of meditation. I stood in my room in the half-light coming from the window, realizing that all things and events can be compared to furniture laid out in a room. All experiences, whether good or bad, pleasant or painful, can indeed be viewed as mere parts of the scenery, without attachment or self-identification. Whatever you come across, you can take in stride, just as you walk around furniture.

Face every situation in your life with equanimity. Face the facts – and put the emphasis on solutions, rather than on problems. There is never any justification for feeling overwhelmed by the tasks at hand: deal with one task at a time, and all the work gets done. Keep bouncing back no matter what difficulties arise; resilience is the mark of liveliness, the will to live.

There is no doubt that will is continuously called for in the course of meditation – at the physical, mental and spiritual levels. In sitting meditations, we have to sit down and stay put, controlling our posture, directing our attention. In moving meditations (such as yoga or tai chi), likewise, we have to make the appropriate moves, at the appropriate rates, with appropriate attention. We have to develop the right attitudes, direct and intensify our awareness, detach from our passions, be patiently mindful, and so on.

All this implies volition, although not always in the simple sense of "forcing oneself to do" something, but usually in a more refined and precise manner. Gradually, as one's discipline develops, one finds it easy to do the right things at the right time, seemingly without effort.

17. Stop substance addictions

Meditation is all about getting to "know yourself" – your body, mind and soul. Almost as soon as you start meditating, you realize that you want to know yourself as you basically are – and *not* yourself as modified by various substances.

In this matter, there is no difference between substance use and abuse. Any quantity that has a noticeable effect, whether it is harmful or indifferent to physical health, is too much for meditators.

If you take drugs, such as psychotropic chemicals[2], marijuana, tobacco or alcohol, or even coffee, occasionally or regularly, in small or large quantities, whatever your pretext or excuse – both your mind and your body are necessarily affected.

If you are having a meditative experience, and you have recently taken some substance, you will naturally wonder whether what you are currently experiencing is "for real" or just an effect of it.

If the experience is negative, you are clearly being shown the need to stop taking such substances. If the experience is positive, ask yourself whether you are satisfied with kidding yourself that you are on a spiritual level worthy of such experience or you will henceforth demand of yourself "the real thing".

On a mental level, then, even if the effect of substances seems or feels good, it is bad. From the meditative point of view, there is no profit in it, only loss; it is not a shortcut to spiritual experience, but a constant hindrance.

On a physical level, too, whatever the substance you indulge in, it is sure to retard your progress in meditation. For instance, so long as you smoke grass, hash or tobacco, you cannot properly practice meditation on the breath. Or again, if you are drunk or stoned, and try to do yoga or tai chi, you will find your equilibrium and coordination inadequate.

Apart from their direct effects on mind and body, the substances we are discussing here all have nefarious spiritual implications. The very fact of resorting to some sort of substance – whether to palliate one's life difficulties or out of sheer hedonism – constitutes a spiritual weakness and surrender. Whether such substances are harmful, or merely useless indulgences, with regard to body and mind, the very fact that one has not gotten the matter under control is indicative of a failing of the soul. One has either not reflected sufficiently on the issues involved, or not exercised willpower in accordance with reason.

Spiritual development requires one take full charge of one's life. It is imperative to completely purify oneself of artificial material inputs, as soon as possible. Of course, this cannot always be done in a flash – but it is much easier to do than it seems to be (as one realizes later, looking back). Use every means at your disposal.

There are social services ready to help drug addicts of all kinds. The medical establishment and alternative medicine offer all sorts of solutions to the problems of tobacco and alcohol dependence. Do whatever works for you, but do it! If you are serious about meditation, and refuse to only pretend to meditate, be an absolutist and get rid of all material impediments without delay and forevermore[3].

The practice of some sport(s) is very helpful in this struggle for physical health. When you walk, run, cycle, swim or play ball, you soon see for yourself the negative effects of the use of substances; and when you do stop using them, the love of exercise will remove from you any desire to return to your old ways. Keep meditating all the while, because that will motivate you and show you the way to go.

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[2] Heroin, Opium, LSD, Cocaine, Crack, Speed, Ecstasy, etc.

[3] A policy of zero tolerance is most likely to succeed in the long run. For instance, an ex-smoker need only smoke one puff of one cigarette to return to his old ways; so, no compromise should be indulged in, not even in imagination, ever. When one is free of such dependence one has no regrets, only a sense of relief, and incredulity that one ever found such a thing at all attractive.

18. Don't stuff yourself silly

The use of drugs is but one aspect of a larger vice – that of pursuing sensations. Our bodies and minds are constantly hungering for sensory inputs and outputs – that is their 'nature'. It is their way of self-assertion, their expression of existence. Such sensationalism, let loose unchecked, is bound to debilitate us. Fortunately, we have inner resources that enable us to judge and restrain such tendencies – our reason and willpower.

The main sensuous dependence of many people nowadays (in our rich Western societies) is simply food. Food is of course natural and necessary to our life and health, in reasonable quantities. But some people are munching for much of their waking hours; or, if they manage to limit their eating to regular meals, they eat far more than they need or is good for them.

A full stomach is not conducive to meditation. Energy that is required to focus consciousness is diverted for purposes of digestion. Food is soporific, or at least tiring. For this reason, meditators control their intake of food – not only its quantity and frequency, but also its quality. It is wise to abstain from heavy, difficult to digest foods, for instance. Many opt for vegetarian diets to various degrees.[4]

Sports (if only a bit of daily exercise or walking) are helpful for digestion, as well as to develop resistance and recover fitness. Physical exercise is energizing, raising one's level of alertness during meditation, but one should not get overly excited by it to the point that one cannot calm down. To avoid getting drowsy during meditation, enough (but not too much) regular sleep is necessary.

A good way to reduce one's eating is, paradoxically, to take the time to enjoy it – growing it (if possible) or shopping for it, preparing and cooking it carefully, laying then clearing the table, washing the dishes. Eating then becomes more conscious, in the way of a ritual[5]. Eventually, one finds time to notice the difference between pleasing one's taste buds and satisfying natural hunger.

One gradually realizes the impossibility of ever satiating the hunger for oral sensations, and the need to resist such pseudo-hunger if only to relieve one's body of the stress of incessant digestion, not to mention the accumulation of fat.

All this is of course obvious and generally well known. But one has to actually take control. To do so, one must realize that one *can* indeed readily do so – by looking upon the stirring of desire as something external to oneself, a mere phenomenon that can and does influence one's freewill but cannot overwhelm it.

19. Limit input from the media

It is nowadays nearly impossible for most of us to avoid influence in one form or another from the various media of communication among human beings. Whereas in times past many people could pass most of their lives in relative isolation and freedom from external influences, today this is very difficult.

Of course, in the past one's family relations and village neighbors could and usually did have overwhelming influence. In today's more individualistic setting, in a much more populous and technological world, the overwhelming influence comes from the media.

"The media" includes principally every press, cinematic and electronic medium of information, propaganda and entertainment. Novels and non-fiction books, newspapers and magazines, fiction movies and documentaries, radio and television, the Internet and mobile telephony – these are the major media we are subject to, at time of writing, in my part of the world.

On the surface, the media are free (of government controls) and competitive. But, in view of the spiritual and intellectual poverty of most producers and consumers, most of the media tend to develop, and for a time perpetuate, certain beliefs and values in common. We call this almost general tendency towards the lowest common denominator our "culture".

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4 One should not of course eat too little, either. This too stresses the body and disturbs meditation.

5 Some have called this "slow food", in contradistinction to "fast food".

Thought is standardized and formatted in easily digested bits, and the flavor of the day is mass-fed. Although fashion currents are getting more and more short-lived, the fact of homogeneity continues. This is of course a reflection of human nature – "man is a social animal", and imitation is the stuff of social cohesion.
Admittedly, not everything is spiritually debilitating in our culture, but many things are and it is important to be aware of such things. It is for instance very important to be aware of the devastating emotional influence of daily, and indeed hourly, news bulletins in the press, on the radio and on TV, and in the newer media. The emphasis being on dramatic bad news, we are bombarded with data that seems designed to arouse negative emotions in us[6].
All this is food for sensation and idle thought. One who is intent on developing the art of meditation has to overcome the strong temptations the media offer. It is important to reduce such sensory input to the minimum necessary, because it only serves to keep us in a certain excited state of mind. We cannot truly plunge into the depths of our nature, into true self-knowledge, if we allow such distractions to constantly rule over us.
Of course, as concerned and responsible citizens, we do need some information, on which to base our judgments and actions. But consider the massive input from the media, and ask yourself how much of that you actually need to fulfill your duties. Following such considerations, find ways and means to limit input as much as possible.
Gradually, as one advances in meditation, one realizes most media inputs to be useless interference in our lives, which block rather than enhance contact with reality. The media pound images and sounds into one's mind, and it takes great effort and time to clear them out. It is easier to just stop them from entering it in the first place.
In this respect, one particularly poisonous input is pop music. This is like a mental virus, because it is sound that is easily memorized even against our will. It consists of some simple, usually repetitive, often loud, jingle – which seems designed to enter the mind of anyone within earshot and remain glued there as long as possible. This causes people to become habituated and attached to the sounds in question, and to buy the record (as the music publishers have well understood).
Such "music" differs considerably with regard to adhesive properties from more classical music. When such a virus enters one's mind, it is sometimes difficult to shake off. We may try to listen to or recall some other sound, to smother out the first. Or the virus may stay on for quite a while, disappearing from consciousness (though often remaining in memory, to reappear at some future time).

20. Forget your face

We live in an age of utter narcissism. Many multi-billion dollar enterprises, such as the clothing and cosmetic industries[7], depend on making egotists out of us and keeping us that way. Of course, one should look decent and smell nice; but there are reasonable limits to such external concerns. At some point, they cease to be expressions of hygiene, and self-respect and respect for others, and become ego obsessions and compulsions.
The confusion of self with one's face and body leads more and more men and women today to pass a lot of their time in front of a mirror. This culture of the body is materialism, in its most radical sense. It indicates a failure of spirituality.
Some people "speak to themselves" in the mirror. In my view, a person who does so suffers from a severe *alienation from self*. Looking into the reflection of one's eyes and speaking to one's image, as if it is another person, is indicative of confusion between self and factors of the ego. Why address oneself so indirectly, when one can do so directly within the mind (or out loud, but without a mirror)?
Many people gaze at their reflection for extended periods, fretting and worrying about the shape and size of each feature of their body, and in particular their face. They use artificial means to conceal uglier aspects and emphasize more beautiful aspects. Some spend hours in "fitness centers" to improve their physical shape (not

[6] Pity at the victims of natural disasters, heinous civil crimes, wars and terrorism. Anger at criminals, at unjust officials, or even at lying and misleading journalism. Hatred towards people who seem to be destroying the world, or simply in response to other people's hatred. And so on.

[7] I should also mention the photographic and home movie industry, which thrives on people's desire to linger on their own physical appearance.

meaning their health, but their contours). Some go so far as to resort to plastic surgery (of their face, their bosoms or their sex organ)[8].

Such behavior patterns are contrary to meditative pursuits. When meditating, we strive not to identify with face or body. At first, they seem very present – because we look upon the world through our face and some parts of our body are visible to us, and because of the weight of the touch sensations within the body and in the surfaces of contact between the body and its physical surrounds. But we strive to eventually become effectively 'transparent' to these and all other phenomenal impressions.

Such transparency is facilitated to the extent that one forgets one face and bodily form. Literally, forget! Beware of even accidental confrontations with a mirror. One may occasionally look into a mirror, e.g. to comb one's hair or to shave – but in such case one should not look at one's whole face, and especially not into one's eyes. Big mirrors are best avoided – prefer smaller ones, or stick to the edges of larger mirrors[9].

It sounds silly at first, but the vain attraction to one's reflection in mirrors has to be resisted, if one wants to eventually free oneself from one's ego. Once one forgets exactly what one looks like (which can be done, as memories also fade), one can no longer bring up images of "oneself" during meditation, and the burden of ego is reduced. And incidentally, beauty (true beauty) naturally ensues from a healthy and spiritual lifestyle.

21. Give up sensuality

A certain level of spiritual realization is required to overcome another weakness common in this day and age – sensuality, by which we shall here mean *the yearning for and pursuit of sexual sensations*. Sensuality includes sexual fantasies, reminiscences and anticipations, since all such mental rehearsing of sex causes sexual sensations, almost as effectively as actual sexual acts do (and indeed, some people's sex lives are entirely imaginary).

Sexual activity is of course normal and necessary from a biological point of view[10], as is food. The problem with it is that it is a very strong force in our body and mind, capable of driving us on a mad search for gratification at any cost. This is especially true when we are young, and our reproductive instincts and powers are at their peak. But it can also be true during late middle age and early old age, when many people cling to their waning sexual abilities (to seduce and perform).

From the meditative point of view, one problem with sex is the energy it dilapidates, which would be better used for spiritual advancement. Without sufficient energy, one cannot meditate long or deeply. Loss of sperm for men (and I assume there is some equivalent incident for women), even if involuntary, is a spiritual retardant; all the more so, if voluntarily caused.

More broadly, sensuality diverts one's attention from the things in life that really matter, the deeper issues. It reinforces confusion of self with ego[11]. It narrows people's concerns to futilities, making them shallow. Their thoughts become frivolous and prurient, their language full of "dirty words". They cannot concentrate or think straight.

Once enslaved to sensuality, one becomes dependent on the receptiveness and complicity of others. When partners are available, all seems well for a while. But when relationships become more tenuous or complicated, or

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[8] Sometimes, at the supermarket, I notice women who have had their face turned into something monstrous by plastic surgery. Can these women truly imagine they have been beautified, I wonder? I feel so sorry for them.

[9] I call hotel suites with a wall-to-wall mirror in the bathroom, which are common these days, "wanker's paradises".

[10] Human beings would not exist as such without reproduction. Moreover, sexual relations not specifically aimed at or resulting in reproduction are biologically justified, since they serve to maintain a family bond, which is useful to survival of the couple and their children. This biological perspective is also, by the way, the Jewish "middle way" regarding sex – a more moderate doctrine than that found in other religions, one based on the general idea that life on earth (if properly lived) is a good thing, intended by the Creator.

[11] Notice, as an indicator, the *chutzpa* that is eventually written on the face of people who engage in unnatural sex acts, for example. Such people confuse their brazenness, impudence and insolence with self-assurance. They boast of "gay pride", only to mask their profound sorrow and shame. But even straight sex (even based on "love") takes its toll, increasing narcissism and selfishness.

they cease to be, much emotional and social difficulty ensues. Sometimes, sufficient anger is aroused to generate physical violence. Much time is wasted trying to "fix things" in the couple; and very often things get even more problematic. One's life becomes woefully entangled – for what has ultimately very little value: some mere sensations!

People regard "romantic love" as the ultimate justification of sex (apart from bonding and reproduction)[12]. But, honestly, most sexual relationships are not based on love, but on lust[13] mixed with possessiveness and dependence. The word love is brought up as sugar coating, as a seductive lie; the liar even lies to himself or herself, too, so as to make the lie more credible to the partner. The true love people may sincerely feel for each other has nothing to do with sex: it is a matter of mutual respect, trust and support.

Of course, sexual attraction for members of the opposite sex is normal and natural. When a man sees a pretty, well-shaped, fresh girl or young woman, he cannot but feel attraction; and similarly, a woman is attracted by a man. These are biological instincts, inscribed in our genes, for the perpetuation of our species. But for this, we would not be here. One has to accept the fact and take it into consideration as a factor, when trying to increase one's chastity. One does well to remember that "grace is delusive and beauty is passing"[14].

Look upon your sexual impulses and desires as mere visitors in your house – as temporary events that can never rule you, if you do not allow them to. Strength of character is possible, even easy, and very rewarding. Do not draw pleasure even from passing sensations, not even in your dreams. Keep your mind and hands clean. Purity of thoughts, words and deeds is essential to spiritual success. And it makes one happy, too.

22. On "sexual liberation"

Contrary to what popular psychology teaches, so-called sexual liberation is in fact enslavement to passions. Sexual indulgences of various sorts may give one a momentary feeling of relief from the pressure of sexual urges, but their longer term spiritual (and indeed physical and psychological) effects are mostly devastating.

Masturbation is not a solution to sexual urges, but a further problem. Masturbation diminishes sexual potency, and general energy and health levels; it reduces self-respect and self-confidence, and lowers attractiveness to the opposite sex; it produces inner conflicts, and makes one melancholic[15]. However strong one's urges, they can be overcome. Never indulge in masturbation at all: it is not worth the trouble!

Nowadays, posing as "sexologists", psychologists, journalists and other opinion-makers, shamelessly tell youth that masturbation is harmless and even good for them. But in truth, such teachings and encouragements are spiritually destructive; their purposes are, in the last analysis, commercial and political. They serve only to enslave people to their baser impulses, and thus to weaken them physically, psychologically and socially.

The same popular opinion makers and "sexual liberators" have given modern society widespread **pornography** and **homosexuality**. Sexual activities, which less than a generation ago were commonly regarded as among the most ugly and depraved, have apparently become fashionable and are defended with "righteous" indignation[16].

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[12] This is, historians tell us, a relatively recent argumentum.

[13] Lust may either be selfish (in which case one pursues self-gratification, without concern for the partner's pleasure or even pain), or it may be cooperative (in which case, the sex acts involved are most accurately described as mutual masturbation). Cooperative lust is sometimes confused with love, note. As for sex with prostitutes (some of which, by the way are unwilling partners – effectively slaves), it is frankly based on lust – but its inherent cynical truthfulness does not justify it.

[14] Proverbs 31.

[15] Moreover, I suggest, it draws many to homosexuality, or at least increases their tolerance towards it – for two reasons: firstly, masturbation is an intrinsically sexually ambiguous act, since the man or woman engaged in it is effectively playing both sex roles, the active and the receptive; secondly, the pornographic stimulants in use often involve images of people of one's own sex (in couples or groups), or worse still people of the same sex (one's own or the opposite sex) in homosexual situations. Such licentious behavior is antithetical to spiritual progress.

[16] This reversal of moral roles has to be noticed and understood, especially by inexperienced youths.

The destructive effects of such ignoble behavior, on individuals and on the fabric of society, are willfully ignored. Do not be a "fashion victim"; do not believe in these media figures, those who pretend to liberate (from moral restrictions and rules) when they in fact enslave (to sensations). They are just seeking to justify their coarseness and perversity of spirit, by sullying everyone else.[17]

Next in line are **pedophilia** and **bestiality**, no doubt. Today these are frowned upon and illegal, but who knows for how long more? I just read on the Internet that efforts are being made to change that already[18]. From the spiritual point of view, this is just a logical development: once the floodgates of sensuality are sufficiently loosened within them, people lose all sanity and become slaves to increasingly weird passions. The abnormal then seems normal.

It is good and wise to have certain inhibitions. Anyone intent on spiritual progress has to learn to *master* their sexual impulses and behavior. This refers to all sensuality, whatever form it takes, from the normal to the deviant. Control your thoughts and words, as well as deeds; remember: first come tempting thoughts, then come encouraging words, and finally the deeds are done.

In this matter as in all others, the psychological sequence of events is as follows[19]: first, we perceive something (or someone, e.g. a beautiful girl); then we evaluate it, finding it likeable (or disliking it); then we desire to have greater or more permanent contact with it (or to avoid it); then comes imaginations (building up the desire by projecting its satisfaction) and rationalizations (so as to fit, however artificially, the idea of such action in one's belief system); finally, we take action (and eventually have to face the consequences).

To say we have free will is to admit that we can at any stage in this sequence of events intervene in our inner or outer behavior, and to stop or reverse things – although this is not meant to deny that such good will may get more difficult as things proceed. To realize this freedom of will, one has to understand that the perceptions, affections, appetites, imaginings and self-justifications that precede volitional action are just only *influences* (of varying intensity) on such actions, they can never *determine* it.

The simplest intervention is to avoid the initial perception, i.e. to deliberately steer clear of potential temptations or turn one's eyes away from them when they accidentally occur. Next, we can challenge the evaluation, and suggest that the object is not as likeable as it may seem. Or again, we can admit the object likeable in itself, but still avoid desire by pointing out its incidental disadvantages. If desire persists, we can still control ourselves by not indulging in imaginations or rationalizations that reinforce it and make it more likely.

Finally, however weak we have been till now, we can still at the last moment opt out of the misdeed concerned; or having already put it in motion, we can still change course. It may be increasingly hard to do, but it is still in our power. This is why we are held morally (and legally) responsible for our actions – and this power of choice is also our great dignity as human beings. So never say "I can't stop myself" – you would only be lying so as to excuse yourself!

23. Practice non-attachment

As previously implied, **suffering** is a negative personal response to sights, sounds, smells, tastes, touch sensations, or feelings or emotions of any sort, that have been, are now or are anticipated to be experienced (for whatever reason) as painful or as loss of pleasure. It is an *attitudinal or volitional response* of the soul to certain

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[17] Don't let them tell you "it is okay, it is natural" (as they keep hammering, *ad nauseum*) – it certainly is neither okay nor natural. It all depends where an opinion is coming from. If a person is spiritually base, his or her opinions are accordingly muddy. Inversely, if a person is spiritually high, his or her thinking is accordingly clear. You do not have to first believe in any tradition to despise homosexuality – just live a pure life and you will be able to see for yourself the spiritual corruption it causes in the people concerned. Opposing it is not "just a religious prejudice", as its proponents contend, but a clear insight from spiritual purity.

[18] "Pedophiles in the Netherlands are registering a political party to press for lowering the legal age of sexual relations from 16 to 12 and to allow child porn and bestiality. The [party], which plans to register tomorrow, says it eventually wants to get rid of the age limit on sexual relations" (worldnetdaily.com news alert, 30.5.2006).

[19] Based largely on descriptions in Buddhist psychology.

actual or potential information inputs – a response of rejection, of wishing or trying to avoid or get rid of certain psychologically unpalatable objects.

It should be noted that there is a positive equivalent of this response – it is **enjoyment**. This attitude or will, to sense or mental impressions perceived as positive (i.e. pleasant or as loss of pain), consists in wishing or trying to grab or cling on to certain objects. Enjoyment is not to be confused with pleasure. Enjoyment is to pleasure (and negation of pain) as suffering is to pain (and negation of pleasure).

Suffering and enjoyment are thus two sides of the same coin – which we can (like the Buddhists) call **attachment**[20]. These are not phenomena, but spiritual reactions to phenomena, note well. That is, whereas pleasure and pain are parts of the realm of body and mind, enjoyment and suffering are direct expressions of the soul.

In the case of suffering, we "draw pain" from pain or insufficiency of pleasure – we are sad, depressed, etc. *in view of* experiencing negative phenomena. In the case of enjoyment, we "draw pleasure" from pleasure or reduction of pain – we are joyful, euphoric, etc. *in view of* experiencing positive phenomena. This is said primarily of current pain or pleasure of any sort, but it also applies to remembered or anticipated pains or pleasures.

Suffering is adding pain on to pain (or to insufficiency of pleasure) – it compounds and prolongs pain by reinforcing our susceptibility. For example, say a motorist rudely drives into the parking place I got to first; there is a first reaction of pain at the experience of such an uncouth person, as well as at the loss of the parking place and at the prospect of having to seek another; but if I allow anger to rise in me – this is the extra pain of suffering.

Similarly, enjoyment is getting pleasure from the fact of increasing pleasure (or of decreasing pain). For example, say the said rude motorist feels pleasure at having gotten the parking place first; if he starts congratulating himself and boasting about it to his passenger – that's the extra pleasure of enjoyment.

Detachment or asceticism, or (less pejoratively put) **non-attachment**, consists in becoming aware of *the distinction between* the attachment of self to pleasures or pains, and the primary pleasant or painful objects, events, sensations, mental impressions, ideas, etc. Once one develops this awareness, one becomes able to *abstain from "drawing"* pleasure from pleasure, and pain from pain, i.e. able to cease emphasizing pleasant or painful feelings with enjoyment or suffering. Such emphasis (i.e. attachment) is, in the last analysis, an unnecessary compounding of the problem posed by pleasure and pain.

Pain is known to all as a negative influence on the will – although, if we ignore or overcome this influence, we turn the pain into an instrument of improved will. Similarly, people must realize, pleasure can be a negative influence, if we attach to it – i.e. it is equally wise to detach from pleasure as from pain. The two poles must be treated in the same way, for *one cannot become independent of the one while remaining dependent on the other*.

To succeed in detaching from pain, one must also detach from pleasure. One cannot be a hedonist and hope to avoid suffering pain or displeasure. The moment one allows oneself to enjoy (i.e. cling to) pleasure, one sets oneself up for the suffering of pain (i.e. trying to head it off or push it away or run from it). The two imply the same addiction of spirit, the same spiritual affliction. One has to give up on enjoyment of pleasure or diminished pain to become truly free.

It is of course easier to give up suffering than to give up enjoyment. But one has to understand that both these habits build up the ego (or more precisely, the self-identification with the body-mind complex). If the ego is sustained by enjoyment, it will continue to feed suffering. Such habits cannot of course be stopped overnight: but, gently does it, they can be weeded out over time.

Thus, when experiencing pleasures, do not linger on them and try to maximize them, as we are all wont to do, but instead look upon them meditatively. This will enable you to also find liberation from pains – i.e. to contemplate them calmly, without fearing them or trying to minimize them.

The causes of or reasons for the pleasures or pains are interesting to know, but ultimately rather irrelevant. Meditators do not pass too much time looking into their life story for the particular sources of their psychological problems; Freudian-style psychoanalysis is itself a form of attachment and self-confusion with phenomena.

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20 This is, of course, but one facet of the connotation of 'attachment', which includes all affections and appetites – likes and dislikes, desires and aversions, hopes and fears, etc. See my work *Volition and Allied Causal Concepts*, chapter 10.

Meditation is concerned proactively with remedying and preventing the root causes of problems, just as a mechanic fixes a car without needing to know how it crashed.

Underlying both suffering and enjoyment is some sort of radical discontent. Suffering expresses this condition by self-pity; enjoyment expresses it by trying to give oneself a boost. The opposite of both these reactions is the attitude of *contentment*. This is not the opposite of suffering only, note well, but the antithesis of both suffering *and* enjoyment[21]. It is freedom of the spirit from passing material and mental phenomena of whatever polarity, freedom from the ups and downs of random emotions.

Non-attachment does not mean feigned or forced detachment (the latter is a pejorative connotation of the term detachment, but not its only sense). Non-attachment is not emotional paralysis, in the way of someone who has built up rigid defenses against emotions. It consists in being cool and collected, not frozen or repressed. It is "being zen" (as people say nowadays in French), i.e. not getting overly excited over virtually nothing. If one meditates sufficiently and well, non-attachment comes naturally.

It has to be stressed, so there is no misunderstanding: recommending 'non-enjoyment' (in the sense above defined) does *not* mean being *against* pleasure. To be impassive is not to be apathetic. Naturally, pleasure is preferable to pain or even to non-feeling.

If one experiences a pleasure (or is relieved of a pain), so well and good – there is no intrinsic harm in that. There is no reason to in principle reject pleasure as such when it happens to occur; nor even to avoid pleasure if one sees it coming – indeed, to do so would constitute another form of attachment. On the other hand, one should not try to make an existing pleasure last or increase; nor, a fortiori, should one pursue pleasure for its own sake or pass one's time dreaming of it when one lacks it. Such hedonist behavior is bound to result in unhappiness (sadness, resentment, conflicts, weakness, etc.) – it is not worth it.

Note however that, because of the polarities involved, our position relative to suffering is not entirely symmetrical to the one just formulated with regard to enjoyment. Our advice to avoid suffering does not logically imply a fatalistic acceptance of pain as such. In the case of pain, if one can avoid it (before the fact) or get rid of it (after the fact), one should of course do so, if there are no more pressing considerations to the contrary.

One should do so – because pain is an obstruction to consciousness and volition, as is most evident in tragic situations (like certain diseases, or like torture). The problem of suffering arises only when pain becomes one's overriding focus, i.e. when any amount of pain (real or imagined) is unbearable. Oversensitivity to pain is spiritually unhealthy.

It is natural to protect and cure our soul's body-mind appendages from harm, and even to look after their wellbeing. The issue here is only to what extent such concerns and pursuits are biologically valuable, and at what point they become harmful in themselves. The limit is attained when our more materialist concerns and pursuits begin to hinder or damage our ultimately more important spiritual values.

Thus, the posture advocated here is: neither exacerbated hedonism nor extreme asceticism, but moderation and wisdom.

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[21] Most translations of Buddhist texts imply the opposite of suffering to be happiness; but this is inaccurate. The term contentment is more appropriate here, and this is the contrary not only of suffering but also of enjoyment, as just explained. Note well that contentment is not an emotion, something the soul passively feels, but *an attitude*, an actively chosen posture of the soul's will. The term happiness is perhaps best reserved for the ultimate bliss of enlightenment, for no one can be said to be truly happy who has not permanently reached such realization.

4. Some Sitting Meditations

24. Time, place and posture

The following chapters are not intended as a step-by-step guide to meditation, but rather to help the reader deal with some of the practical issues that arise in the course of meditation. But first a few words on getting started….

When should one meditate? In principle, anytime – but in practice you will get best results if you select the time when your environment allows you maximum isolation and peace. I personally find the middle of the night an extremely precious time for meditation: there are almost no sights or sounds to disturb one at that time, and one can really get deep. Of course, prepare the ground as necessary; e.g. turn off your fridge if you can hear it.

But there is no hard and fast rule: some of my most satisfying meditation sessions have been in the morning or the evening. In the morning, one is well rested and thoughts have not yet multiplied; but one may be impatient with meditation, knowing that one has many things to do in the day ahead. In the evening, one may be tired and full of thoughts; but sometimes the fact that one's day is over allows one to develop intense meditation.

You should try different meditation times, and find out the time of day or night that suits you best. This may vary – e.g. your readiness to meditate may differ on weekdays and on the weekend. As you progress, your favorite time may change.

How often and how long should one meditate? In principle, as often and long as possible! Some grand masters are reported to have meditated for several days non-stop, and pursued such an intense regimen for years. Beginners like us should just do their best. The important thing is to *commit oneself to regular meditation*, and slowly increase the time devoted to this exercise.

If you are just starting, first institute a minimum of 10 minutes a day. I use an alarm clock (not a loud one) to make sure I do not sit for less than the time allotted. At first, let that meditation period be anytime in the day that you happen to be free. This gives you a chance to try different times, in accord with your routines. After say after a week or two of this, institute a regular time, e.g. in the morning before breakfast, or in the evening before going to bed.

Once you have mastered this first discipline, increase the time to 20 minutes a day, and stick to that for a few weeks. Alternatively, you might – rather than increase the time per sitting – try sitting for the same amount of time twice a day; see how that feels. Gradually thereafter, increase the total amount of time per day: first to half an hour, then to 40 minutes, then to one hour, then to 90 minutes, and so forth.

Don't exaggerate, though, because the most important thing is not how much you can meditate in one sitting or one day. The most important thing is to meditate the amount of time you have decided you can handle, *every day without fail*. Once you settle comfortably in a certain amount of daily meditation, stick to it – don't go back to a lesser amount.

The reason for this rule is that the effect of meditation is gradual and cumulative. It takes time to build up in you the magical changes it is capable of producing. Things happen bit by bit – if you give them time to happen. Do not be over-ambitious and try to sit for too long too soon, or you will experience rejection. Also, do not sit for too short a time, if you can manage more, because the shorter amount of time may be insufficient for noticeable results.

Note that on the weekends you might sit for longer amounts of time and/or more often, than you do on weekdays. But here again, if you do that, it is best to make it a habit.

Where should one sit and meditate? In principle, one could meditate anywhere. But in practice, it is wise to pick a spot that is reasonably quiet and where no one is likely to disturb you. Facing natural scenery is nice, if you are outdoors; but there should not be too much activity in front of you. If you are indoors, better face a window or a blank wall than an area cluttered with furniture or other objects.

In short, avoid having things in your range of vision that will distract you, directly or by association of ideas stimulating thinking activity. Similarly, do not place yourself where you can hear your neighbors' music or conversation. However, background sounds need not deter you from meditating, if they are not too loud or persistent. The same applies to other sensory input.

Go to the toilet before you sit. The air you breathe when you meditate should be fresh; open a window for a while as necessary. Your body should be kept warm, but not so warm as to make you drowsy. Wear loose clothes, so as

not to impede blood circulation or breathing. Loosen your belt, so your belly is free to move. Take off your glasses.

What **sitting posture** is best for meditation? The ideal posture is the "lotus" position, i.e. sitting cross-legged, with the left foot on the right thigh and the right foot on the left thigh. This posture is best, because of the feeling of stability and oneness it gives one's body during meditation. For most of us in the West, this is not an easy position to assume, however; and if done using force or excessively it can damage your knees. But note that, if you are willing to make the effort over enough time, there are yoga exercises that train you for it[1].

The next best posture is the "half lotus": sitting on a cushion, you fold one leg by placing one foot over the opposite thigh, and fold the other leg *under* the first. Practice the half lotus on both sides equally, and in time you might attain the full lotus. A third option is to sit cross-legged with both legs folded down – most people can do that briefly; but, in my opinion, this is not very good for meditation, because the back tends to curve and keeping it straight is a constant struggle.

Another common posture is to squat, without crossing one's legs, on the upturned soles of one's feet (the "Diamond" pose); this is a comfortable posture if you can do it. Not so recommended is to sit on the floor with both legs folded outward, because this twists the knees unnaturally.

If you find these Eastern postures too painful to sit in for long periods of time or if you just cannot sit in any of them[2], do not foolishly let that deter you from meditation – just sit on a chair! Meditation is something mostly non-physical, although physical pain can be an object of meditation and transcending pain through meditation can be very satisfying indeed. You do not have to look like a Buddha when you meditate. Just do the practical thing, and choose the posture appropriate to your body.

If you sit on a chair, do not rest your back or arms on any support; sit on the edge of the chair or use a stool. Do not sit on a couch; nor can you meditate slouching or lying down. The seat should be neither too high nor too low, so your legs form a right angle and the soles of your feet are flat on the ground, with your knees apart about a shoulder-width. If the seat you are using is very low, cross your lower legs a bit, resting the outer edges of your feet on the ground[3].

The important thing, however one sits, is to keep one's back and neck straight. Sitting partly on a cushion lifts up the lower back and helps straighten the spine. Stretch your spine, as if it is tied down at the coccyx and you are pulling it upward from somewhere above your head. Your torso should be upright. But do not push your chest out and pull your belly in; instead, draw the shoulders back and relax them downward (both equally), and let the belly relax outward.

The head should feel like it is floating over the neck (allowing maximum energy flow through the *chakras*). Bend it slightly forward, pulling the chin inward; but do not rigidly lock into this position. Do not however let your head bow down (this is indicative of heavy thoughts); and do not let it fall back, either (this movement away from objects in sight is indicative of fear or arrogance).

Relax your face: mouth, forehead and eyes. Look straight ahead, eyes turned a bit down. Do not stare at any particular object, but rather rest your eyes without insistence on the region in front of them. If you find yourself too caught up in visual stimuli, then close your eyes for a while and turn your attention inward. If you find that with closed eyes you think too much, reopen them.

Rest your hands on your knees or thighs, but do not lean on them. Alternatively, join your hands below your navel (on or above your lap), resting one hand on the other, with the palms upturned and the thumbs lightly touching[4].

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[1] Such as the Butterfly (sit with your foot soles touching each other and gently push your knees up and down or swing them left and right) and the Crow Walk (sit with your bum touching your heels, put your hands on your knees, and then walk). Such exercises of course need time to bring results.

[2] E.g. if your knees are damaged or fragile.

[3] But this blocks circulation in the feet somewhat.

[4] This is the "cosmic *mudra*", favored by Zen meditators. There are many more possibilities, which you may discover from other sources. The important thing is to facilitate internal energy flows and avoid blocking it, however one positions the hands.

Breathe freely and calmly. Repeatedly check and correct your posture, throughout the sitting. But preferably stick to your posture and avoid any need of corrective movements.
Once you have well positioned yourself, mentally choose some meditation technique (such as awareness of your breath) that seems appropriate to your current state of mind. Lock your attention firmly onto the chosen method, and do not let go till the end of the time you have allotted. Do not loosen your grip; do not allow your mind to wander and distract you from this concentration.
If you are meditating for a long period, and halfway through you seem to have reached an impasse (e.g. acute restlessness or mental agitation), it may be beneficial to get up and walk about very slowly and mindfully for a short while. Always end your meditation sessions with a few minutes of such 'walking meditation', timing your steps to match your breathing (at a rate of one or two breaths per step).
At the end of your meditation, do not immediately subject your senses to strong inputs, or spring directly into cogitation or action. Avoid jarring experiences or activities; otherwise, your head may experience some fragility in the hours ahead. Keep the meditative mood going for as long as you can.

25. Observe the mechanisms of thought

It is normal for thoughts to arise during meditation. Look upon your thoughts with a non-judgmental, benevolent attitude, to begin with; you do not want to get into conflicts with them. You want to get to understand thinking, before you can hope to master it.
To the beginner in the art of introspection, thought appears as a long series of obscure mental goings-on, a unitary mental event that zips past almost uncontrollably. Slowly, as one becomes more proficient, one learns to analyze one's thought processes in various ways.
The realm of what we call "thought" is very broad, much broader than some people realize. In its largest sense, the term refers to *any content of consciousness other than apparent direct experiences* of matter, mind or self. Thus, it excludes, firstly: purely sensory perceptions; secondly: mental percepts when they are not taken to symbolize or refer to something beyond themselves; and thirdly: intuitions of one's self and/or its functions.
Notice first the different *specific forms* of thought. Thoughts may, as commonly supposed, take the form of "verbalizations", i.e. verbal sentences "inside the head[5]" or spoken out loud to oneself or to other people. But some thoughts take the form of visualizations and (visual memories or imaginations) and the auditory equivalent of that ("auditorizations", let us call them) – audiovisual mental projections ("perceptualizations" would be an appropriate general term), which may or may not involve words.
Note that concrete memories seem to be the storage of past experiences; whereas concrete imaginations are mental projections about what past, present and/or future might be, or even fictions without precise temporal location.
Moreover, what we commonly call "thought" is often more precisely acts of will, or velleities (incipient acts of will), or intentions (to will), or valuations. We know most of our personal acts of will, as well as velleities, intentions and valuations, directly through intuition (or apperception). This self-knowledge may be memorized; and in turn, these intuitive memories may be used as elements in imagination.
Such imaginations relating to will may or may not be accompanied by audiovisual imaginings and/or verbal thoughts. One may also, by mock will[6] within oneself (with or without perceptualizations and/or verbalizations),

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5 Or, as people used to say, "in one's heart".

6 Note well that mock will is *not* mere visual imagination of will, for will is insubstantial, i.e. non-phenomenal (known only by intuition). If I imagine my arm moving, it does not follow that I am imagining that I am moving (by will causing the movement of) my arm. I must either conceptually add on "suppose I am moving it" – or I must, more concretely, by volition produce a representative micro-movement, or faint velleity of movement, or mere intention to move, in my physical arm right now. Such *symbolic* will, in which a real will stands in for an imagined will, often underlies so-called mental projections about one's own or other people's acts of will (into the past, present or future, or without time location).

mentally *project* will, velleity, intention or valuation on oneself *or other people* (for example, I may thus imagine the girl I desire desiring me back).

Many of our thoughts are or involve value judgments, which may be positively or negatively inclined. These thoughts constitute our affections and appetites, and often generate emotional responses, in one's body and/or mind. These emotional charges may in turn generate additional thoughts on the same issue, and increase or decrease our previous valuations. Thoughts may also imagine emotions through words or preverbal intentions, or by audiovisual imaginings (e.g. a woman crying and wailing).

Notice furthermore, the abstract, conceptual domain that we seem to derive from the concrete perceptual (material and mental) and intuitive (self-knowledge) domains. The latter, experiential domains serve as data and springboards for our eventual ratiocinations, comparisons and contrasts, conceptualizations, logical checks, theories, rationalizations, and all such non-experiential aspects of our beliefs.

Thus, all told, there are many different formal building blocks to what we commonly refer to as our thoughts. One "thought" may involve various combinations of these different formal elements.

Note in particular that an apparently purely verbal thought involves mental projection of word-sounds (or very rarely, the visual images of written words) and the intentions that give meaning to these words. Very often, little noticed behind these words, there are additional visual and auditory memories and imaginations, as well as volitional-evaluative events and emotive phenomena, all of which further enrich the verbal elements.

Logicians further analyze verbal thoughts into "logical forms", with reference to their semantic content. For instance, "X is Y" is a logical form, "X is greater than Y" is another, and so forth. We may also in this context keep in mind grammatical distinctions, like the first person, the second person, etc., or like the past, present or future tenses. Analyses of discourse such as these help clarify and evaluate our thinking procedures.

Logicians, and indeed all thinkers, are also of course concerned with issues of the truth or falsehood of thoughts. It is important in this context to distinguish deductive (analytic) and inductive (synthetic) reasoning. The former can yield truth or falsehood, the latter only probabilities (degrees) of truth or falsehood. Most thinking involves both kinds of reasoning.

But *during meditation*, we are not all that interested in the epistemological evaluation of all our thoughts, because this would only perpetuate and multiply thought. We are in a receptive posture of observation, rather than active posture of research. We must of course be honest in our observation, i.e. not distort or evade the information at hand, to ensure it is truthful. But we should with discipline leave more complex cogitation concerning the data to another time.

All that is one level of analysis of the phenomenon of thinking – identifying its elements. These elements are usually put together in different compounds, or *scenarios*. For example: I imagine a scene where I tell my friend: "sing me a song!" and she answers: "no, I intend to go home". Note that all this is going on in my head – my friend has nothing to do with it (though she, if she at all exists, may in the past have behaved in a similar manner).

The elements in this scenario are: "I imagine [the whole scene]"; "I imagine myself saying something ('sing etc.') to someone"; "I imagine that someone having an intention ('to go home')"; "I imagine that someone answering verbally". Each of these elements is in itself a thought of some form, and the elements come together in the overall scenario, not necessarily by mere addition (like a series, like beads in a necklace), but often nested (imbedded one inside the other).[7]

We each often reenact the same scenario in recurring *patterns* of thought. For example, a loser in matters of love may always imagine a girl he would like to accost rejecting him. Yet another way to analyze thought is *thematically*. This refers to the overriding driving force behind the thought process. One chain of thought is moved by lust; another by avarice (financial greed); another by self-justification; another by family attachments; another by scientific curiosity; another by piety; and so forth.

It is important to distinguish these various aspects of thought. When a thought arises during meditation, if you are instantly able to thus analyze its structure and understand its causes, it ceases to absorb you so much. Its

[7] There is an infinite number of possible scenarios, of very variable complexity and nuance. I imagine X; I imagine myself imagining X. I intend to do X; I think I intended to do X yesterday; I think I will do X tomorrow. I imagine Mr. Y doing activity X; I imagine Mr. Y intending to do X. Etc.

underlying foolishness and futility are made apparent. You become relatively immune to the hypnotic power of your thoughts and you can disengage from them more readily.

Pursuing further, we have to distinguish two aspects of what we call mind: the volitional aspects and the unconscious-involuntary aspects. The latter could (for our purposes here) be called 'the automatic mind'. This 'mind' seems to have 'a will of its own', in opposition to our own will. However, this is only a figure of speech, for the automatic mind has no volition – it is merely a theoretical construct, which we figuratively hold 'responsible' for our unconscious drives, involuntary acts, etc.

The memories and verbal thoughts that arise and go on (in some direction, for some time) seemingly spontaneously and automatically, in meditation (and in the rest of living), are productions of the brain for which we are not necessarily directly to blame. But they are not usually as random and haphazard as they appear – no, they are driven by our desires, dislikes, hopes, fears, etc. And these affections and appetites are not mere happenstance, but are consequences of the soul (the self) over time having certain preferences and making certain choices in action.

That is, they imply volitions of sorts, at one time or another, if only on a very low level of consciousness. Once our at least indirect personal responsibility for seemingly random thoughts is realized, it becomes easier to overcome them in meditation. They become more intimate and tractable. It is important to observe how "random" thoughts arise during meditation:

> I may notice an emotional charge affecting me. I realize I am suffering a little. I can (or assume I can) trace that feeling to something someone said or did – e.g. they made some philosophically erroneous remark. I then try to alleviate this suffering of mine, by preparing or planning to prepare some countermeasure – e.g. the counterarguments I will offer to correct the error. This gets me thinking about different options.

In such ways, thought is driven on and on. We get caught up in it, trying to redress wrongs or improve our situation in one way or another. This is "samsara", the entanglement and unending grind of our minds. It is better to disregard suffering or fancies, and move on. It is better to act than to react. It is best to be content, unafraid and satisfied. Thought, however random it seems, always has underlying causes.

Meditative awareness of one's thoughts can be described as mentally placing oneself "above" one's own thought currents, so that one is watching them with some detachment as they proceed. In this impassive spectator's posture, thoughts appear as mere mental *events* in which one is not too involved – as relatively objective flutters of activity. This is sometimes called "self-awareness" (inaccurately, in my view).

We must however distinguish simultaneous thought-awareness from ex post facto awareness of one's thoughts. The former is the more difficult to attain, though it becomes easier as one's mind gets calmer. Most thought-awareness is after the fact; it is really awareness of the final echoes and the memories of thoughts, rather than awareness of the thoughts themselves. Simultaneous awareness is strong enough to transcend thoughts in full bloom, whereas retrospective awareness allows us to get feebly caught up in them for a while.

Note that meditation itself calls forth some initial thought. Meditation instructions are thoughts, so are philosophical observations and reflections about meditation. Such thoughts are sometimes useful and sometimes even necessary to meditation – but one must be able to eventually stop indulging them, too, otherwise one misses the whole point of the exercise. One can instead direct one's course through wordless intentions and volitions.

When I give myself instructions in meditation, like "try counting your breath" or "go back to breath awareness" or again "okay, now let go all techniques" – I am acting like my own guide or guru. This role is at first necessary to regulate one's meditative activity, and try and reach a favorable state of mind by the shortest, most effective route. Every sitting is different in this respect, so you cannot use a standard roadmap. However, the more often and longer one meditates, the quicker one gets there and can drop off all voluntary discourse.

Meditation is largely an empirical process of self-discovery. One cannot be told the way fully in advance by other people, but must gradually learn it by practice. The methodology is mostly trial and error, though philosophical insights can clarify one's ways and means as well as goals and ends. Thus, thought is not all bad, but can give us direction, motivation and inspiration. But in excess such thoughts can become impediments, so one should tread them lightly and drop them a.s.a.p.

26. Stop unnecessary thinking

Notice meditation involves some "paradoxes". You want to stop all volition – but that is a major act of agency! You want to be fully present as a Subject, attentive to all that's going on, and yet you don't want to change anything: you don't want to stop fantasying or thinking, but only to observe it happening – but that of course "changes everything"! You want to get beyond your "ego", that ever present heavy "I", which is a fiction, an erroneous extrapolation from phenomena, you want it to disappear – yet you are never more "present" than when you succeed!

Such conundrums can at times, in early stages, seem muddling and even paralyzing. We are trying apparently to "square the circle". We get tied into knots difficult to unravel. This too feeds thought. Here too, we must learn to cut the Gordian knot and move on. The key is to realize that when discourse gets stuck like this, it does not mean that the action contemplated is impossible. It is a problem of discourse, not action. Go on with your meditation, and put aside all philosophical speculations (leave them for some other time, when you are not meditating).

Don't blame others for the problems you encounter inside yourself or in your life. Avoid negative judgment of others, for it is only a way to divert attention from your own problems. Don't let negative emotions arise and take over your consciousness – no disgust, resentment, anger or hatred. Stop them dead as soon as possible (and it is possible at any stage). Such thoughts and emotions are useless, and they hamper inner peace.

Similarly, avoid delighting in things that give you pleasure. Let the thought of them pass without greed. Think: my body and mind are mine, they belong to me in the sense that they are associated with me and I am to some extent responsible for them, but they are not me, not to be identified with myself, my soul. When I attach myself to positive or negative sensations, thoughts, emotions, I confuse myself with things really external to myself.

When you manage to stop active thought, a sort of passive thought process occurs – consisting of echoes of thoughts, velleities of thought, pretexts to pursue thought. It is as if your (automatic) mind is trying to tempt or provoke you to think, because it feels uncomfortable or vulnerable with inner silence. One of these passing thoughts may eventually hook you, like a fish caught seizing a dangling worm; then the thought drags you on a long journey, till you realize you what is going on and opt out.

This underlying tendency to thought in the mind may be viewed as a "background noise", without which mind just disappears. The mind's contents are mere holograms, inner light and sound projections without much substance; in their absence, there is no mind. When we allow ourselves to get absorbed by thoughts, we give this mind tendency free reign. More precisely, if we do not switch off the "automatic pilot" of mind, it strongly draws us into chains of thought.

In this perspective, one can understand and feel compassion for people who are overwhelmed by their thoughts, sometimes to the degree of committing crimes apparently "against their own will". If we have not acquired the habit to check our thoughts, they have a momentum of their own, and can counsel us to do some regrettable deeds.

It takes an effort to stop the mind's anarchic tendencies. It is not so easy, especially if we try to do it "by force". Rather, the way to do it is by gently, gradually calming the mind through meditation.

To eventually control thought, one should develop a habit of not talking too much, if at all[8]. For a start, don't talk more than necessary *to yourself*; avoid ongoing discussions within your head or out loud. Use your mind efficiently. Monologue is important and difficult enough to resist – but even more important and difficult is avoiding unnecessary discussions with other people, about this, that and the other.

For in dialogue, you have two or more minds at work, babbling away, feeding each other material that keeps the conversation going on and on. Chance eruptions of thought in one mind stimulate new eruptions of thought in the other. There may be no connection between the discourses of the people concerned. People more often than not talk at, rather than to, each other. They seem to just want to release through speech some energy pent up inside them[9]. They search for something more to add, to make sure they have exhausted their conversational reserves.

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[8] Strictly speaking, this includes talking *in writing* (which is of course just what I am doing now)!

[9] In some cases, the process is triggered and kept up by a seeming need of attention; as if people need to be acknowledged to exist by being listened and talked to. Conversation also of course serves as a means of social bonding.

Another wise precaution is to minimize input of stimuli like the news, in newspapers, on TV or the Web. Most journalists seem intent on producing the maximum amount of worry and anger in us, as they pound us with an endless barrage of bad and maddening news stories. It is probably best to ignore it all, and concentrate on spiritual concerns.

Our minds may be variously "elastic", i.e. able to bounce back to natural peace quickly or slowly. When one sits down to meditate, one has a certain amount of "echo" of sounds and sights leftover in the mind, which takes varying amounts of time to die down. Emotions can be particularly persistent. Perhaps some people have a quicker rate of recovery of inner peace than others (and likewise, the same person has sometimes a quicker rate than at other times).

Just as in the physical domain, the skin tissue of a youth quickly recovers its smoothness if we pinch it, whereas that of an aged person takes more time – so in the mental domain, individuals may have varying mental elasticity. This refers not only to sights and sounds – but also to emotions; for instance, if one feels anger surge – it may subside quickly or do so with difficulty. And indeed, the idea can be extended to all thoughts; for instance, if one has some worry, it is variously possible to stop thinking about it.

If we wish to achieve the meditative state of being "in the present", we must obviously train ourselves to have more elastic minds – minds able to switch off a thought at will.

The easiest way to achieve non-thought is to abstain from thought from the moment you wake up in the morning (or in the middle of the night) to meditate. Don't stir up thoughts before you sit to meditate, and you will have that much less work to do once you sit. It is also wise to *get in touch with your inner yearning* for enlightenment and love of meditation practice, so that you are well motivated and your attention is sincerely focused as you prepare to sit.

When you sit, immediately position your attention (as it were) at the mental place where thoughts spout forth. *Go to the very root of thought formation inside your mind, and stop thoughts from even arising* (so you will have no need to suppress them thereafter). This is an efficient, surprisingly easy technique – a shortcut to steady presence of mind in the here and now. Seeking nothing, just sit… and sit… and sit.

27. Dealing with distractions

In Judaism, the concept of "impurity" relates to idolatry, bloody hands, improper sexuality, and other such specific misdeeds; and there are degrees of purity or impurity. In Buddhism, the concept of "impurity" is much more radical than that – it refers to (almost) all thought, because thought is considered as stirring the mind up and obscuring its native clarity.

Impure thoughts and actions, according to Judaism, eventually cause suffering – feelings of shame, guilt, regret, remorse, reproach, ugliness, dirtiness, unclarity, confusion, conflict, pain and so on. If, for example, one has a weird sexual dream, one feels soiled by it upon awakening; if one practices similar perversion in real life, one is all the more so hurt. Buddhism goes further, and teaches that all ordinary thoughts and actions are polluting, in that (or insofar as) they "load us with karma" and blind us to the crystal clarity of ultimate reality.

In one of the 'koans' of *The Gateless Gate*[10], two Zen monks argue as to whether a flapping flag is moving or the wind moves it; their teacher (the Sixth Patriarch) intervenes, saying that it is neither, but instead it is their minds that were moving. When years ago I first read this story, I took it as a statement in favor of the mind-only school of Buddhist philosophy; but today I understand it – a bit better supposedly – as a practical instruction.

Events take place all around the meditator (i.e. in his mental as well as material surrounds). Our common tendency is to (to put it graphically) pounce on almost every such passing enticement. But the meditator must exercise self-restrain, for every such pouncing motion prevents him from true stillness of mind. He must not be a slave to events, but remain impassive. To keep the mind still requires a firm commitment of will to stillness. This is achieved most readily by focusing attention at a deeper level.

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[10] A collection by the monk Mumon. See *Zen Inspirations*. Ed. Miriam Levering. London: Duncan Baird, 2004. (p. 114.)

If we position our mind (i.e. our attention, to be more precise) at the surface of things, it tends to attach to external distractions or passing thoughts. We become absorbed in the wrong way. The above koan teaches us that such mental "attachment" does not only mean that the mind passively sticks to passing phenomena, but that it actively moves out and grabs them or even seeks them out. It is not something static, but dynamic. Attention is rarely at rest for long, but repeatedly *shifts* over from one object to another.

Thus, the word attachment here refers not only to the fact of gluing attention on some object irrelevant to the meditation, but to *the action* of transferring such gluing from one random object to the next. This motion occurs again and again, so that the mind is never at rest on some fixed object of meditation. To stop such overly nervous reaction, one must avoid compulsive or obsessive movements of attention. One must cultivate a more impassive outlook, and look further inward.

A Zen teacher[11] long ago reproved me angrily for fidgeting while in meditation, by shouting at me "Don't move!" This exhortation should be understood not only physically, but of course mentally, and even spiritually. Physical movements proceed from mental movements, which in turn would have no significance were it not for movements of the soul, i.e. the instability of its attentions. If the spirit holds steady, the mind calms down and the body follows suit.

If inner or outer disturbances assail you – whether they appear as sights, sounds, emotions, or in whatever phenomenal modality – consider yourself as *transparent* to them. They pass through you, unable to affect you in any way. They are just turbulence in the scenery. They are all manifestations of a domain parallel to and apart from the spiritual one you are resting securely in. You can observe it, but it cannot move you.

It is useful in meditation to look upon distracting surrounding things and events as occurring in the domain of 'samsara'. Samsara is a powerful and pervasive force, attracting our attention. It drags our spirit down, keeping us away from the peace and freedom of meditative absorption.

It is like a swamp, with quicksand at every turn. Our pleasures and successes suck us into this domain, by making us like it and want to stay in it longer. And our pains and failures bind us to it, too, by their negative psychological impact and by getting us frantically involved in trying to find ways to get away from them[12].

But samsara becomes its opposite, nirvana, the moment one regards all positive and negative things and events as opportunities for spiritual progress. They offer the challenging material needed to work on oneself. Thanks to our efforts to transcend their influence through meditation and other works, we can attain true happiness and enduring peace.

Samsara is not essentially an 'external' problem. It is not your bad moods, the pains in your legs or the offensive people out there that make up samsara. It is something within you – your personal outlook on such things and events that makes the difference. If they distress you and can shove you off course, you are subject to samsara. If instead you remain internally unaffected and stay your course, you are effectively free of it.

When Zen masters say that realization is "neither samsara nor nirvana", they mean that it is not necessary to be literally transported out of this world of matter and mind into some other dimension. The illusion of having a certain unpleasant and restrictive mental and physical environment can equally well and more immediately be dissolved by a mere change of attitude towards it. The moment one is detached from its influences, one is already free. One can be in the midst of it, but it cannot have the same effect on us.

Wherever and however you happen to be – with nice or nasty people, in a prison or a luxury setting, in health or in sickness – if you are essentially above it all, if you remain centered and mindful, you are already 'there'. It is sufficient: there is no need for more. Realization is not a place, like a paradise – it an internal (spiritual) freedom.

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[11] The Japanese monk called Roshi, who had a Zen center in Jerusalem's Mount of Olives for some years. This occurred back in 1979.

[12] The noise you hear, and the yearning for silence or nicer sounds. The ugliness you see, and the yearning for beauty. The evil around you, and the yearning for good. The conflicts, and the yearning for peace. The problems, and the yearning for solutions. The worries, and the yearning for all to be well. The failures, and the yearning for success. The pain you feel, and the yearning for relief from it or for pleasure instead. All these are aspects of samsara.

Many Zen sayings and stories emphasize this. Like the sayings: "Chop wood, carry water" or "When thirsty, drink, when hungry eat". Or the story of the Zen master who, when he screamed in pain, disappointed one of his students, who confused equanimity with insensitivity.

It is well to note in this context that many apparently paradoxical statements in Buddhism (like "neither samsara, nor nirvana") are not intended as logical statements of fact, but as psychological recommendations.

On the surface, such statements seem to appeal to some "tetralemmatic logic", in crazy disregard of the laws of thought. They seem to affirm the possibility of contradiction (i.e. to say that "both X and not-X" can be true) or to deny the necessity of exhaustiveness (i.e. to say that "neither X nor not-X" need not be false).

Such paradoxical statements cannot be reconciled with normal logic: they are in fact inconceivable and *they can only enter into discourse by divorcing the words used from their meanings*. Such incoherent statements are usually proposed by or to people ignorant of logic, as deceptive attempts at discursive one-upmanship[13].

But if we look more closely at certain mystical statements, which seem to communicate something valid and wise, we realize that their apparent antinomy is only due to verbal inaccuracy. They do not refer to facts, but to *our approach to* facts. They do not mean that the objects labeled X and not-X can coexist or both be absent, but refer to *our intentions towards* those objects can both be adopted or discarded.

Thus, it is perfectly consistent to recommend that, in meditation, we ought not allow ourselves to get entrenched in definite predications like "This is X" or "This is not X", but we ought rather keep an open mind. This is not a claim that something might be "both X and not-X" or "neither X nor not-X", but merely advice to withhold judgment on the issue, i.e. to regard it as irrelevant (in the present circumstances, at least). It is simply an injunction to relax one's rational faculty for a while and be content to only observe things, just as they are, without discursive interference.

In the specific instance of the Zen "neither samsara, nor nirvana" – it seems superficially inconsistent, considering that nirvana is originally the label given to the negation of samsara; but in the present context the intent is that we should not *pursue* nirvana anymore than samsara, because this attitude of pursuit is as much a hindrance if our attachment is to nirvana as if our attachment is to samsara. This does not deny the value of nirvana, but only reminds us that *pursuit of* nirvana keeps us locked in samsara, since samsara is the realm of attached existence irrespective of what it is we are attached to.

28. Sitting forgetting

In meditation, thinking appears as a product of unconsciousness, because it takes an extra effort of consciousness to be aware of one's thoughts in the way of an observer – as events embedded in the mind field, coming and going without our entire participation. During meditation, I look behind me and see a long trail of scattered thoughts and bodily movements, all of which upon reflection seem rather pointless wastes of time and energy, mere restlessness and agitation.

Meditation is a very important instrument of spiritual development. Meditating consists in getting the soul to mindfully stop reacting to the body's and mind's usual drama and noise, so that the way things really are (whatever that happen to be), within and outside us, is allowed to shine through. Meditation is aimed, to begin with, at developing immunity to external and internal distractions.

Meditation is thus not inner chatter or manipulation, which would compound the problem to be solved. It is not artifice; it is nature. It is not a method for producing visualizations or extraordinary sounds for entertainment

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[13] That is to say: if I say "X" and you say "not-X", a third comes and says "both X and not-X" and a fourth trumps him by saying "neither X nor not-X". But if we proceed thus, there is no end to it; for another contestant might say "both [both] and [neither]" and so on *ad infinitum*. Since the tetralemma denies the laws of identity, of non-contradiction and of the excluded middle, anything goes, and nobody can win any argument. If no one can ever tell reality from fiction, how can the advocates of the tetralemma be dispensed from this rule (of theirs) and claim their paradoxical logic applicable to reality? Such discourse does not make any sense. Only the thesis that the laws of thought are universally applicable makes sense.

purposes, or for religious excitement. On the contrary, we seek inner stillness and silence through it. Even attempting to reproduce past meditative experiences, however interesting they seemed, is counterproductive.
It is essentially, as one Zen description has it, "sitting quietly, doing nothing".
A simple, direct method of meditation is known as: "sitting forgetting". The name of it aptly describes it – by doing this, we quiet and calm the body and mind. Sensations and thoughts are like stirred dust – let that dust settle and avoid stirring up more dust. Keep in mind that you cannot settle dust by force – that just stirs up more dust. The volition involved here, then, is that of non-action and self-restraint (against all physical and mental activity).
Our thoughts are composed of sensations (through all the senses), mental perceptions (the mental equivalents of sensory perceptions), memories, visual and auditory imaginations, anticipations and expectations, and theoretical discourse, including discourse about the current meditation, which means: abstractions, conceptualizations, formulating propositions, developing arguments and counterarguments, and ordering knowledge.
Apart from the initial stages of sensing and perceiving in the present tense – i.e. cognition of the here and now – all subsequent stages of thought rely on memory. Therefore, if we wish to intensify our cognitive contact with the here and now, which is the first intention of meditation, we must learn to put memory aside for a while, i.e. to *forget* everything.
Forget *the place and time* in the world that you are in. What the apartment you are sitting in looks like, what its address is, in what city and country, what planet; what time of day it is, what day of the week, what month and year. All that is memory. If you are fully concentrated on the here and now directly in front of you, you ought to be able to ignore all other places and times.
Forget, even, *your own identity*. Who you are, your name, what you look like, your family relations and friends, past episodes of your life, your present context, your financial worries and future plans – all such details require memory, and so must be forgotten during the meditation session. Remembering is allowing the brain to contribute mental images and intentions that are not immediately relevant to present experience.
Memory could be viewed as stored "karma": it reflects and echoes previously lived experience, extending the sensory (material) domain into the mind. Our fantasies and theoretical thoughts, being based on memories reprocessed in various ways, may likewise be viewed as bundles of "karma" – carrying and perpetuating past experiences beyond their natural existence. The word karma is appropriate here, because this storage of experience has eventual consequences on our inner and outer life.
Memories are of course part of the whole present experience when they occur; but in this context, they are to be viewed as extraneous parts, which distract us from the more direct experiences. At first, of course, memories are unavoidable, and have to be treated just like pure experiences; but gradually, they are to be weeded out, by repeatedly preferring to turn one's attention to the here and now.
Sitting forgetting is not an attempt to permanently abolish or destroy all memories, but is a way to eventually control the delivery of memory items to conscious attention. Instead of an involuntary and anarchic delivery, which distracts and confuses thought, we develop a more poised and appropriate delivery. It is an exercise that strengthens the memory faculty, rather than damaging it. We forget and stop thinking during meditation – but later, when we need them, our powers of memory and clear thinking are increased.
Of course, it is impossible to *make oneself* forget something – for the moment one thinks of it in order to forget it, one brings it to mind. So, the word forgetting is here meant in an ex post facto sense, not as an action to be done. Sitting forgetting is also called "just sitting".
Sitting in meditation, I at first observe my attention wandering away from my chosen here-and-now object of meditation. My mind is scattered, unable to hold onto its intended object for more than a moment or two; my control over my own mind is feeble. Remembering irrelevant things is failing to remember that I am supposed to be meditating; it is forgetting the here-and-now, in favor of the *not* here-and-now!
The antidote is persistent focus and attention. Generating more awareness; increasing concentration. Gradually locking onto a chosen object; returning to it again and again every time the mind strays. Collecting one's mind; striving for one-pointed mind, for one-mind. Eventually, one attains a degree of contemplation that may be characterized as no-mind, because mental interference has disappeared. At the end, I may even forget myself, forget that I am sitting there meditating and just experience the object.
Just sit comfortably, check your posture often, eyes open without staring (occasionally eyes closed if need be), watching breath naturally go in and especially out of nostrils (counting breath for awhile, only if you cannot

follow breath without doing so), keep returning to breath come what may (without discussing why your attention strayed away), watching thoughts run through your mind without getting caught up in any of them, letting them wind down (if necessary, use mantra for awhile to help them do so), watching them gradually disappear, experience the resulting inner tranquility, quiet and light, don't push it or lose it….

If perchance you have some special meditative experience, such as an extraordinary clarity, peace or joy, do not lose your composure – remain steady in it, neither trying to perpetuate it or intensify it, nor trying to escape it or attenuate it. These are, paradoxically, two opposite tendencies common in such circumstances: an impulse to hold on to what seems nice (attachment), on the one hand, and an impulse to get away from what seems unusual (fear of enlightenment), on the other hand.

29. Breath awareness

In meditation, we direct our attention on various means, rather than on any goals. We focus on our posture, our breathing, our mental contents, and other such current experiences, rather than on enlightenment, liberation, or similar ends. This is reasonable, since any shift of attention towards some purpose is bound to diminish or remove our concentration on present events. Once they have served to motivate us to start meditating, goals become irrelevant and can even cause interference. Once engaged, meditation should be wholly intent on means. The goals will come to fruition when their time is ripe.

Meditation is not a pursuit of "special effects" (unusual interesting experiences) – but a search for the shortest, most direct route to certain major insights. The means of meditation are characterized as techniques, to emphasize they are to be used as and when useful, and dropped as soon as they have fulfilled their function, or replaced when another instrument would seem to be more effective. We should not get attached to them: they are disposable tools justified only by their effectiveness at the time concerned.

Awareness of breath is a valuable meditation technique. Because breathing involves a natural, cyclical movement, it both draws attention (as all change does) and tends to be forgotten (as all unchanging things do). Both these features make it valuable, since we do not only want our attention drawn (by the movement) but also want an effort on our part to be called for (to maintain and concentrate awareness).

Ideally, you just quietly focus your whole attention on your breathing for a long time; your mind becomes calmer and clearer. Patiently, without interference, follow your breathing every step of its way. In practice, at first, this may not be as easy to do as it sounds. Difficulties commonly arise, for which a variety of solutions are traditionally proposed.

Adopting breathing as your object of meditation, you resolve to resume breath observation again and again, whenever some sensation or incipient thought turns your attention away. No sense blaming yourself, or arguing about the causes of such digressions. They may at first be quite frequent and prolonged; but in time, they become rarer and briefer. Just ignore them and persevere, and the meditative profit eventually comes.

In early stages, it is very difficult to capture one's natural breath. The moment one directs one's attention towards the breath, one's volition seems to interfere. This may be due to the will tending to be coupled together with consciousness, so that whatever consciousness aims for is also to some extent grabbed at by the will. The will to cognize the breath is confused with a will to control the breath; that is, 'breath awareness' is confused with a 'breathing exercise'.

Alternatively, the sudden shift of attention towards the breath deflects the breath. That is, the breath is momentarily interrupted by the effort of attention; and volition intervenes to artificially restore breathing, until the natural function gradually takes over again. In short, the relationship of consciousness and will is very delicate; and there is a fine line, easily crossed, between natural and forced breathing. So, one must tread gently and carefully.

In any case, continue to be mindful of your breathing, even if it is unnatural and you seem unable to get it to be natural. Tell yourself that your object of meditation does not have to be your natural breath – it could just as well be your unnatural breath. This indifference is likely to eventually defuse the underlying conflict, if you persevere long enough.

Often, too, the in and/or the out breath is/are imperceptible, and we are tempted to force breath a bit, or to invent it somewhat, so as to be able to perceive it. Avoid such temptations, and instead meditate on the apparent absence of breath[14]. Alternatively, feel (or even look at) the up or down movements of your abdomen as indices of your breath coming in or going out.

Cigarette smokers are at a great disadvantage in this meditation technique, as are people whose nose happens to be clogged by a cold or flu. For in such cases, the breath is heavy, loud and ragged, and it is very difficult to get past willed breath and find natural breath. In such circumstances, people with some yoga training physically clean out their nose using a *neti* pot and use to appropriate *pranayama* breathing exercises.

Other people may, until their handicap is cured, just abandon breath awareness and resort to some other meditation technique (like mantra recitation, for instance). However, do not give up on the breath awareness techniques too soon, because often they succeed in unblocking blocked noses. Or, if you do abandon breath awareness, return to it after a while and you may find it easier.

I get the impression that there are two breath currents taking place simultaneously: beneath the coarse, noisy current, there is a finer, less manifest current – and it is the latter breath that really gives us the air. When meditating on the breath, try to spot the more hidden, underlying air current, and preferably meditate on that. Eventually, the gross, louder breath should disappear.

Breathing can also be affected by ego interference. If you think of breathing in and breathing out as an activity of yours, as a pulling in of air and pushing out of air by you, you are too present in the equation. Rather think that the air is coming in from and going back out to the surrounds, and you are just sitting there observing events. Better still: forget yourself.

As soon as you are comfortably seated, take a couple of deep breaths. Give your mind a couple of minutes to settle down naturally, before starting breath awareness in earnest. Then slowly try to "become one with" the breathing.

Every so often, during any meditation, check your posture, as this affects breathing patterns. If your posture is incorrect, avoid making abrupt moves to correct it, but rather move very carefully so as not to affect breath rhythm. To avoid having to repeatedly correct posture, best preemptively remain attentive to keeping a good posture. Also, frequently check that your mind is clear. If you are involved in thoughts, your attention to breath is obviously diminished.

If one's thoughts are very loud and insistent, as often happens, it is best to use a breath-counting technique for a while, before using silent breath watching. There are many scenarios; one I use is to: breathe in and out naturally, then think "one", breathe in and out naturally, then mentally say "two", and so forth, to "ten", then think "first set". Repeat this till the fifth set of ten breaths (i.e. fifty); then start again for another round of fifty breaths. After a few rounds, I usually stop counting and concentrate on the breath wordlessly.

Note that no counting is done during each breath cycle. I do the counting at the end of each in and out breath cycle, rather than (as others prefer) at the beginning. It might seem the same, but I find calling the number first tends to encourage interference of will more. However, this is not a very important detail (some teachers suggest using both ways).

The important thing is to have *an attitude of patient observation* towards the breath. If you get impatient, your breath tends to artificially speed up. If you disapprove of its rhythm, your breath tends to lose its rhythm.

If your emphasis of attention is on the counting, your will tends to interfere with the breathing cycle, so as to make it even and fit it into a mechanical enumeration sequence. The breath becomes rather forced and speedy, and you lose consciousness of it eventually, focusing in a routine manner on the numbers instead. You try to rush through the task of counting ten then fifty breaths, to get it over and done with and go on to the next stage. This is not the right attitude. What's the rush? Rather, let the breath go on and on at its own pace.

Feel the air as it travels into and out of your body – through your nostrils, mouth, throat, lungs and belly. Feel every detail you can of the physical contacts between the traveling air and these channels. Feel obstacles (like a blocked nose); feel temperature differences. There are also contextual sensations and imaginations, including

[14] Undetectable breath that is not necessarily a bad thing – it may indicate your breath is very fine, smooth, regular, etc. Sometimes, of course, breath is undetectable because your attention is absorbed by thoughts.

smells smelt[15], sounds physically heard or mentally hummed, visualizations of the breath in motion, and visual effects inside your eyelids or in your mind if your eyes are closed, the "internal clock" measurement of breathing rate, the sensation of up and down movements of the belly. Also be aware of your thoughts concerning the breath.
Notice that sudden sensations, emotions, bodily movements and thoughts all affect (and conversely, are affected by) the breath's rate and pattern. For instance, an exciting (positive or negative) thought tends to speed and disturb the breath, whereas a calming thought slows and smoothes it.
All these factors together constitute your awareness of breath. Gradually try to become aware of them all, separately and together. But do so without artifice, just watching. Breath may be, to various degrees, natural or forced; long or short; slow or fast; light or heavy; rich or poor; smooth or ragged; regular or irregular; even on both sides, or uneven; equal in and out, or unequal; physically silent or noisy; with or without parallel mental sounds; you may feel it all the way along its route or only on part of it; it may be warm or cool, all or part of its way; smells may come with it; and so on.
Notice also the changes in these various parameters over time. Take the time to detect every detail you can (though do not worry if you cannot detect very much). But then, at some point, stop such intellectual interference. Its purpose is to increase your interest and sharpen your concentration; but taken to excess, it ends up making your mind wander. Return to mere watching your breathing, without complications or pretensions. Silently, with increasing calm and concentration.
Eventually, even give up intentionally focusing on the breath. You may continue to be aware of it, but this happens without intention. Your attention may rest partly on your breathing, and mostly on other things. You are mindful of it, yet free of it.

30. Being here and now

Clear your mind of all idle thoughts, and "be here now". This means in part – do not be absorbed elsewhere and/or at another time. If one's attention is elsewhere than here to any extent, it is insufficiently "here". Likewise, if one's attention is not entirely in the present, it is not enough on the "now". Keep in mind that only the here and now can actually be directly experienced. One can only be conscious of something "elsewhere" or "at some other time" through memory and/or imagination – i.e. indirectly.
The moment one thinks – whatever be the subject matter and whatever the form the thoughts take (memory recalls, audiovisual imaginings, verbal discourse, wordless intentions, attitudes, velleities or volitions) – *one's attention is necessarily diverted to some degree from the more here and now experience* (sensory and intuitive aspects of experience).
Admittedly, one's "thoughts" are also in a larger sense parts of the here and now, together with more direct experiences; but in this context we wish to distinguish between secondary and primary elements of the here and now. Note also that the said diversion of attention occurs not only in cases where the thoughts concern past, future, imaginary or theoretical topics, but even in cases where the thoughts are reflections on the here and now.
For this reason, if we wish to concentrate on the here and now, we must avoid distracting thoughts and aim for eventual inner silence. Although such peace of mind may at first require exercise of the will to achieve, it is possible to eventually just naturally rest one's attention on the here and now without effort.
But awareness of the here and now is not essentially awareness of the objects presently before you; such contents of awareness are merely an intermediate stage, a means. It would more be more accurate to describe awareness of the here and now as awareness of the space and time in which present objects seem to reside. The objects are relatively incidental – it is finally perhaps just the fact of awareness that ought to be focused on.
Awareness of space and time independent of their passing contents means that we focus on the supposed container of material and mental events rather than on those phenomenal events, or any intuitive or intellectual events. The

[15] Smells may come from one's own body or the surrounds. Note that interpretation is involved: one can imagine the smell sensations one has to be from this or that source, whereas in fact they are from elsewhere.

contents are transient, the container – or the one experiencing it and the experiencing of it – are relatively constant.

Thus, in meditation, whether sitting or moving, one tends towards consciousness of the fact of awareness, rather than of its content. This means: neither adhering to nor avoiding or evading any content of consciousness that happens to appear at any time. This may be what meditators describe as the experience of "being in the eternal present", because one's attention is not following or escaping one's perceptions, intuitions or thoughts, but one is contentedly resting in pure awareness.

The statement "Time does not exist, it is a perpetual present"[16] is in my view a good reminder of a philosophical truth – that time is a theoretical construct; in practice, all we experience is the contents of the present moment that our sensory, mental and intuitive faculties happen to get in contact with. (The present moment, note, is extended in time, not a mere instant of time.)

We must notice that "the present" is in fact a very, very brief moment – and a variegated and complex event. It includes experiences in the various perceived phenomenal modalities: sensed sights and sounds, and touch, smell and taste sensations, as well as the mental equivalents of these sensory experiences (memories of them[17] or derived fantasies); and it also includes experiences in the various intuited non-phenomenal modalities: one's cognitions, volitions and valuations. *Sometimes only some of these modalities are included* in our present; sometimes perhaps all.

Moreover, in all combinations of these modalities of experience, all we can lay claim to at any moment is *very partial and fleeting glimpses* of any supposed perceptual and intuitive totality. I do not see everything that is before me, but my eyes roam from one point of interest to another. Similarly, my ears focus on one sound then another. I may feel my hands, then my lips, then my eyelids, etc. Mental images and sounds are also flickering, changing. My self-awareness comes and goes.

The continuous, all-inclusive present we ordinarily assume is thus in truth *composed of* very tiny flashes of experience of various sorts. *We* give this patchy experienced present some apparent solidity and coherence, because we continually mentally correlate sensations and memories, and add the present occurrence of the present to some past occurrences of the present and to some anticipated occurrences of the present.

What we ordinarily call "the present" is more precisely mostly a ratiocinative construction (by means of intentions at first, well before any verbal interference) of many more punctual presents, as well as some remembered and anticipated presents.

As one advances in meditation, one becomes more conscious of this mental act of putting together a jigsaw of elemental present, past and future (i.e. actual, earlier and later) experiences of various modalities, to make up a more continuous and consistent compound present. It is very difficult to spot the purely here and now experience.

Given the elusiveness of the present, consider how approximate and uncertain are our memories of the past, and all the more so our anticipations of the future. Reflecting on such complications, one cannot but also look upon our abstract, conceptual, theoretical knowledge as open to much doubt.

But keep in mind that we cannot logically take such skepticism so far as to make a blanket denial of all knowledge – for then we would be denying our denial too! Such reflections nevertheless serve to motivate us to look for and concentrate on the elusive purely experiential present. It is the key to getting us in contact with "reality" eventually.

Meditating on impermanence does not mean building a philosophical system around the fact of impermanence or a supposed principle of impermanence – it means, simply, watching things come forth, stay a while (some briefly, some more insistently), and then eventually go. Similarly, some apparent causal relations may be observed, but should not arouse discussions. Just watch it all patiently, without mental comment, unaffected.

You are stationary, at the center of the world, watching some things – including your perceived body and mind in motion, and your intuited self's consciousness, acts of will and value-judgments – occurring around you like a 3D movie, coming, staying and going, seemingly interacting. Your self is immune in this ongoing display, inwardly

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16 Quoting Claude Chabrol's movie « *La fleur du mal* ».

17 At least sights and sounds; I am not sure the other modalities of sensation are clearly reproducible in the mind.

still, realizing the relative illusoriness of all surrounding events. Being in the perpetual present is perhaps identifying oneself with this central empty position.

On occasion, especially sitting cross-legged in lotus pose with eyes closed, the present is experienced in a very tactile manner, as the sensation of one's whole body as one piece. Ordinarily, we experience scattered bits and pieces of the body separately; but during meditation, when great peace descends on us, the body can get to feel truly unitary, and this is a very pleasant and relaxing feeling. In this experience, the body is as it were suspended, for our focus is entirely on it, to the exclusion of surrounding matter.

> But it is worth also occasionally trying to realize the continuity between one's body and surrounding matter. The dividing surface between them is in truth ultimately imaginary, if one considers it at the atomic and subatomic levels. The body is constantly ingesting air and other substances from the surrounds; and the body is constantly releasing sweat and other substances to the surrounds. Who can say at what point in space and time such substances are or are not "part of the body"? Any characterization of a molecule in one way or the other, as inside or outside the body, is sure to be arbitrary. Moreover, elementary particles are ultimately but bundles of waves, and it is impossible to objectively say where a wave starts or ends. All matter is interlaced, without boundaries. Therefore, in reality, we are one with the surrounds. Reflect on and feel that oneness.

Meditating on the here and now, it is best not to stare at the physical or mental phenomena around us, but rather to focus on the emptiness between them – that is to say, the empty space between visible bodies[18], the rest surrounding movement[19], the quietness in the midst of which sounds are heard[20], the moments of non-thought separating thought[21], and so forth. Become conscious of the transparency, stillness and silence underlying all experience.

Become aware that there is something formless in the apparent forms you see, hear, feel, smell and taste – they are all part of a single continuum, which we are in the habit of projecting divisions into. But do not deliberately blur your vision. When the mind calms sufficiently, the ratiocinative acts that cut up (and then compare, contrast, conceptualize, order and describe) the empirical domain gradually dampen, and one has a more receptive and holistic mode of experience.

An experience I have occasionally, when I reach a great depth of inner peace, is that of pure water. The vision of a calm pool of clear, fresh water, supposedly reflecting the calm of my mind. Or a lovely downpour of transparent, refreshing water, as if a tap were suddenly opened allowing energy to flow from the upper to the lower levels of my psyche. Or the image of rain coming down into me, like a blessing from the heavens above. All such experiences are very satisfying and encouraging. It should be stressed that these are not voluntary visualizations, but visions that suddenly and unexpectedly just happen to one.[22]

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[18] Better, the empty space they all seem to inhabit. More precisely, it is the space between oneself (the observer) and the objects (observed) that one should focus on. Or even, one might profitably focus on an imagined "transcendental space" *within and behind* all phenomena. Or perhaps most accurately put, what we are looking upon here is the "space of mind", i.e. the extension in which mental images and sounds seem to occur; this *mindspace* can be experienced even when we have managed to clear our mind of all sights and sounds, i.e. even when it is empty.

[19] Movement grabs attention more than rest: this is a biological law, to draw our attention to possible predators or prey. But actually, considering one moment at a time, rest is by far the larger portion of our experience. Become more aware of this underlying rest, at least during meditation.

[20] If there were only sounds, no sound could be clearly distinguished. It is only due to a background of silence that sounds are heard.

[21] As meditation proceeds, thoughts become shorter in length and less frequent, and inner peace gradually gains a foothold and spreads. As soon as you notice this development, start focusing on the emptiness between your thoughts, instead of getting involved in the thoughts themselves. In this way, the "space" between them is expanded, and their dampening is accelerated.

[22] Such experiences can also seem negative or of doubtful polarity. Once, meditating after an unfortunate wet dream, I experienced clean waters near my sex organ being polluted by some brown waters. One time, I experienced fire – and could not decide how to class this vision.

31. With or without a self

An experience I once had: as I came out of a meditation, I felt my mind tangibly slipping back into its habitual identity, as one might sink into a comfortable, familiar old couch. This insight suggests to me that our ego-identity is a sort of 'mental habitat', a set of mental parameters that we attach to because we have become used to doing so. But meditation teaches us that this tendency is not inevitable – we can get off the couch, and if we must sit somewhere sit elsewhere.

What is called 'fear of enlightenment' may simply be the centripetal force that pulls us back into our habitual identity. The individual self feels secure in the ego-shell it has manufactured for its own protection; it restrains consciousness from leaving its usual limited view on things and flying up high into the universal perspective. Without this tendency of resistance to change, we fear our "I" might suddenly dissolve and leave us defenseless.

One should avoid basing one's meditation on a metaphysical or other ideological prejudice. Meditation ought to be a process of free discovery, rather than of imposing some preconceived notion on oneself. The way I figure it is: if there is some important basic truth out there, then it will make its appearance to me too eventually. This is not an attitude of lack of humility or faith, but one of respect for the efficacy and universality of meditation.

This is the attitude I adopt towards the Buddhist doctrine of "no self" (*anatman*). If the Buddha discovered through deep meditation that there is no soul, then everyone else ought to in time be also able to (if they proceed with similar enthusiasm). From a merely discursive, philosophical point of view, I am personally (as already explained above and in previous writings) not convinced of this notion.

However, this resistance to arguments that do not strike me as entirely logical does not prevent me from agreeing that it is sometimes appropriate in meditation *to behave as if one has no self*. Though I believe that it is the self that so behaves, I do believe it is possible to behave in a quasi-selfless manner. Thus, the Buddhist doctrine that there is ultimately nothing behind our impression of having a self, other than passing clouds of phenomena, can be used for practical guidance without having to be accepted as a theoretical dogma.

For selflessness, in the sense intended here, is indeed meditatively, psychologically and morally valuable, if not essential. To be cognitively truly "in the present tense", you must get to ignore all the memories and anticipations that make up your phenomenal identity or ego. Indeed, even your underlying soul, that in you which cognizes, wills and values, has to abstain from making its intuited presence felt. By becoming *de facto, if not de jure, absent*, you make way for pure experience.

In meditation, then, we do hope for apparent if not real self-effacement. We try to get past the cognitively imposing impression of self, and attain some transparency of being. Our ego (the superficial self), which is an aggregate of phenomena, including all our modalities of perception, bodily sensations, emotions, fantasies, our life's motives, the people we think about, and so forth – should fade away in the course of meditation. Likewise, our soul (the deeper self), comprising our being conscious, our willing and our valuing, apperceived by intimate intuitions, should eventually disappear.

Such disappearance need not be taken to mean that the soul is really nullified. It may be (in) there, yet cease to appear. The Subject of awareness is in fact present, but its awareness is not turned upon itself (as is its wont to do). There is a surrender of subjectivity, in favor of objectivity; a self-abnegation of sorts occurs. You cease to be a person in your own mind, and focus on whatever else happens to be present.

In this state of absorption[23], you have no name, no accumulation of character traits, no past, no future, no history, no family, no record, no intentions, nothing to think of or to do, no loves and hates, no desires and fears, no virtues and vices. Moreover, you forget your cognitive presence, your will to be there, your value judgments – and you just are. This state of self-forgetfulness makes possible a more universal consciousness, because self-consciousness tends to limit our vision.

It may well be (allow me to suggest it, as at least conceivable) that the Buddhist dogma of "no self" is a deliberate doctrinal lie, by the religion's founder or later authorities in it, with the best of intentions – made on the premise that, even if this doctrine is logically untenable, it is *useful* to meditation, because *the belief in it facilitates* self-

[23] Presuming it is in fact possible – I cannot confirm it firsthand.

effacement. The intent in proposing this doctrine was not to express some theoretical truth, but rather to generate a *practical* consequence in a maximum of people. The intent was to get a job done – viz. to help people get to realization.

If believing there is no self more readily advances to consciousness without self-consciousness, and thence to universal consciousness, then teachers may do people a favor by telling them there is no self. But teachers could also admit to people that there is a self, or even just that there *might be* a self, but tell them they should *act as if* there is none. Even if the former method is perhaps more efficient, the latter method may still be effective. The ultimate result may be the same, although in one case we are treated as children and in the other as adults.

There is no doubt that – not only in sitting meditation, but also in moving meditations, and indeed in everyday life – self-awareness of the wrong sort can interfere with the clarity of one's consciousness and the smoothness of one's actions. Granting the self is a hurdle to ultimate insight, it has to one way or the other be annulled. A simple solution to this problem is to deny the self's existence. Another, if more demanding, approach is to recommend *pretending* there is no self.

Thus, even if we do not entirely accept in the Buddhist idea of emptiness (non-essence or non-identity), we might yet reap its benefits and manage anyway to render our self inconspicuous and unobtrusive. The alternative method here proposed seems logically legitimate, because it acknowledges that the seeker cannot really know in advance whether or not there is a self, except by hearsay evidence (the reports of allegedly realized predecessors).

The *anatman* doctrine is far from convincing on a deductive level; therefore, it can only be proved inductively, by personal observation, if at all. The issue of self versus selflessness is a hurdle, but it must not be made out to be an impasse. If realization is indeed a human potential, then this hurdle can be passed over without resorting to dogma. So, if belief in selflessness helps, quasi-belief in it is ultimately just as good.

Concerning the above comments on the issue of self, the following objection may be raised. What about the more Hindu and Jewish doctrine of universal consciousness, viz. that it is consciousness of the grand Self behind all individuated selves, i.e. consciousness (to the extent possible) of God? How can that metaphysical interpretation be rendered compatible with the Buddhist recommendation (based on denial of whatever substance to any self) to forget the self?

We can argue that even if ultimate realization is consciousness of God (the reality of Self behind all illusory little selves), it can still be considered necessary to overcome one's habitual, insistent focus on "I, me and mine". And indeed, if we look at the moral injunctions of Judaism – and the Christian, Islamic and Hindu religions – the emphasis on modesty, humility and altruism is evident everywhere. It means: get past egotism, egoism and selfishness, and see things more broadly and generously.

If we reflect on this, it is obvious that no consciousness of God, to whatever degree, is possible without surrender of all conceit, pride and arrogance. No one dare face his or her Creator and Judge as an equal. One has to have an attitude of deep reverence and total submission; any disrespect or defiance would be disastrous. Even in a Zen approach, the attitude is one of utter simplicity, lack of pretentiousness. "You'll never get to heaven" while flaunting your ego as usual.

32. Whether mind or matter

Note that similar arguments to the above can be used in other metaphysical fields. For example, the Yogacara school's "mind only" doctrine (Mentalism) may be found useful to the meditator, to help him distance himself from apparent matter and material concerns. But such utility need not depend on the literal truth of the doctrine; it may suffice to regard it as just a tool. In spiritual pursuits, one has to be pragmatic, and not get bogged down in disputes.

It may be enough to think and act as if matter does not exist, for the same meditative benefits to ensue. Even if one considers the existence of matter as the most inductively justified hypothesis, the one most successful in explaining all available data – one retains the mental power to put those theoretical convictions aside during meditation, and flexibly attune one's mind to the outlook intended by the Yogacara doctrine, so as to attain more important insights.

The doctrine that our experience even while awake is "but a dream, an illusion" can be rephrased, in modern (computer age) terms, as: all that appears before us is "just virtual world". We can equate phenomenal appearances to a sort of massive hologram, a 3D movie "empty of substance" – yet which produces in us the same emotions, desires and reactions of all kinds, as a "real world" would.

The equivalence between the illusory and the real is at least conceivable in relation to the modalities of sight and sound, for it is introspectively evident that we can dream up sights and sounds as clear as those we apparently sense.

But in the case of touch (and smell and taste) sensations, I am not so sure we *can* perfectly reproduce them mentally, even in the sharpest dreams. However, I am not sure we *cannot* do so, either. There is (to my mind, at least) an uncertainty in this regard, because it is hard to tell for sure whether the tactile (or odorous or gustatory) phenomena that we experience in dreams (or in awake memory or imagination) are truly mental (memory recall) – or simply physical (present sensations) events that we interpret (intentionally or verbally) in certain ways.

For example, if I kiss a girl in my dreams – am I producing in my mind a phenomenon comparable to the sensation of her lips on mine, or am I simply *reading* the sensations currently felt on my (lonely) lips as equivalent to the touch of a girl's lips? These are two very different scenarios. For, if I can imagine touch (as I imagine sights or sounds), then the phenomenological difference between mind and matter is blurred. But if touch (etc.) is not mentally reproducible, then careful observation should allow us to tell the difference between dream and awake reality.

Thus, we ought to distinguish two types of memory – the power of recall and that of mere recognition. In recall, the original impression (seemingly due to physical sensation) can sometimes, voluntarily or involuntarily, be fully reproduced in a relatively virtual domain (i.e. the apparent mind). In mere recognition, the power of reenacting the original impression is absent, but if a similar impression does arise, one has sufficient memory of the original (somehow) to be able to relate the later impression to the earlier and declare them similar[24].

But even while using such distinctions to discriminate between apparent matter and apparent mind phenomena, they do not provide us with the means to judge between Mentalism and Materialism. Because the mind-only advocates can easily argue that these are apparent distinctions within the realm of mind; that is, recall and recognition may be two categories of event within the framework of Mentalism. They could equally well be viewed as categories within a Materialist framework. Therefore, we have no *phenomenological* means to decide between the two theories.

This being the case, the mind versus matter issue (so dear to metaphysicians) is quite irrelevant to the meditator. Whether it turns out metaphysically that mind is matter or that matter is mind, or that there is a radical chasm between them, does not make any difference to the meditator. Meditation is a phenomenologically inclined discipline. Whether an object is yellow or red is of no great import to the meditator; all he cares to know is what it appears to be. Similarly, the metaphysical difference between mind and matter is of no great significance to him.

What seems evident phenomenologically is that mind and matter are not totally unconnected realms of appearance. (a) They contain comparable phenomena (i.e. sights and sounds within them seem to resemble each other). (b) Their "spaces" to some extent overlap (note the fact of hallucination, i.e. projection of mental images outside the head – as e.g. when one takes one's glasses off and they still seem to be on).

(c) Also, mind and matter seem to have causal connections – in that our memories (and thence imaginations) seem to be caused by our material perceptions; and in that we produce changes in the material domain after having mentally imagined such changes (e.g. in technological invention).

(d) Even if we wished to claim mind and matter to be radically different substances, we would have to admit they have in common the fact, or stuff, of existence. Similarly, the subsumption of mind under matter or matter under mind seems ultimately irrelevant. In the last analysis, it is a merely verbal issue. Whether the answer is this or that, no change occurs in the facts faced.

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[24] That is, we "sense" a vague familiarity, but we cannot clearly establish it.

Meditation is not a search for the answer to the question about the ultimate substance(s) of existents[25]. All the same, this statement should not be taken to exclude the possibility that a fully realized person might experience something concerning the mind-matter issue, and might wish to comment on it.

Rather than linger on such philosophical conundrums during meditation, we should rather always infinitely marvel at the mystery of the facts of consciousness and will. How is it that existents "appear" to other existents? One part of the world seems to "know" another part of it, or even itself! Whether such appearance is momentary or goes on for a lifetime of years or eternally – it is a truly wondrous event! Similarly, how amazing it is that some entities in nature can apparently to some extent "affect" themselves or other entities in nature, by way of causation or (even more amazing) by way of volition!

Such questions are not asked idly or with hope of philosophical answers, in the present context, but to remind oneself of and remain alert to the miracle of consciousness and will. One should not take such powers for granted, but be aware of one's awareness and one's choice of awareness. At least, do so to some extent, but not to a degree that turns your meditation into a pursuit. Irrespective of any passing contents of consciousness, and of what stuff consciousness is 'made of', the fact of consciousness remains extremely interesting[26].

"Mind-only" philosophers (and this category includes not only Yogacara Buddhists, but in the West the likes of Hume and Berkeley) have proposed that we only perceive mental phenomena, by arguing that all so-called material phenomena have to be processed through local sense organs, sensations and brain, before the perceiver can access them.

That doctrine is wobbly, in part because it starts by assuming the validity of our scientific perceptions of the sensory organs and processes, and ends up by denying the reality of the very empirical data it is built on. That is, its proponents fail to reflexively ponder on their own information sources.

However, our first objection is not the main logical argument against it. The main reason that doctrine does not stand firm is another epistemological error. The Mentalists make the same mistake as do the Materialists – which is the common error of Naïve Realism. They each assume their doctrine is the only conclusion that can be drawn from the data at hand. But, as evident from the fact that both schools appeal to the same empirical data – that data can be interpreted either way.

It is not through a deduction that the issue can be resolved, but only through an open-ended induction. The only way to decide is by considering both these theories as scientific hypotheses, to be evaluated with reference to the totality of ongoing empirical findings. That is to say, only through a systematic, holistic, gradual approach, which we might refer to neutrally as Subtle Realism. This, of course, is the Phenomenological approach.

In phenomenology, the emphasis is on *appearances as such*, without immediate concern as to their ultimate status as realities or illusions, or as mental or material, or with any other such fundamental characterizations of data. Phenomena *qua* phenomena – and likewise intuitions *qua* intuitions – are always true. Taken "for itself", every appearance *is* just what it *seems* to be.

The issue of falsehood (as against truth) only arises when appearances are no longer regarded *at face value*, and we use some of them *to signify* some other(s), so that we have to try to judge their truth value relative to each other. For this reason, phenomenology provides us with the most conceivably solid foundation to any philosophy or science.

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[25] So far as I can tell. Some Buddhists, particularly those of the Zen persuasion, have had the same indifference to the issue. However, some Buddhist philosophers have debated it for centuries. It is surprising. Perhaps these monks were curious or looking for entertainment.

[26] Some have called this the "field of mind"; but, though the term "mind" here conforms to frequent colloquial use, I would avoid this expression, and prefer the broader term "field of consciousness", reserving the term mind-field to the putative substratum of mental phenomena, i.e. to a specific category of contents of consciousness.

33. Already there

A phenomenological stance is consistent with the teachings of meditation by Zen masters, when they insist that meditation is not a pursuit aimed at acquiring Buddhahood (ultimate realization). We are already Buddhas, they teach, and *zazen* is merely the typical behavior of Buddhas.

By sitting in meditation, we simply express the "Buddha-nature" already in us, rather than try to add it on to us. We express our native Buddhahood, our very "ground of being" as conscious entities. We just settle comfortably into the "nature of mind", i.e. into pure consciousness.

Placing and resting one's consciousness at the phenomenological level, the domain of appearances, we naturally, without artificial activities, recover our true identity and a true perspective on all things. By floating freely on and in the waters of the ocean, we become one with the ocean and know it more intimately than any motorized mariner ever could.

Similarly, in Judaism and like religions[27]. Faith in the existence and omnipresence of God – an effective faith in everyday life, including trust in His guidance and providence and submission to His rule – is considered *equivalent, for most intents and purposes*, to full consciousness of God.

In other words, it is not necessary to be at a supreme level of consciousness of God's presence in order to be agreeable to God. If one believes in Him and serve Him as one should; whatever one's spiritual level, if one lives, thinks and acts in a manner that constantly acknowledges His unseen presence and kingship, one has equally well fulfilled one's duty.

If one acts *as if one has* God-consciousness, then *one effectively has* God-consciousness. Just as a servant does not require an audience with the lord of the manor to fulfill his task, one does not need to receive fancy personal revelations to conscientiously and loyally do one's job in this world. Our works, whatever they are, loudly proclaim our actual spiritual position.

By "works", here, I mean: mental and physical behavior, including personal, social and religious acts. I am using the expression in a broad manner, tolerant of various traditions. I am referring to moral virtues most people agree with, like personal rectitude, common decency, helping others, fairness in law, kindness to animals, and so forth[28]. Without moral behavior, one cannot seriously claim to believe in God. Therefore, such good behavior may be considered (partial) evidence of belief.

Religious acts, like prayer or various ritual acts, are also (partial) evidence. If one prays to God, one may logically be assumed to believe in Him (at least that much); one would not bother praying otherwise (except of course pretending to pray for the social benefits it might bring; e.g. to belong in a community). Similarly for other acts of worship: engaging in Divine service may (normally) be taken to imply belief in the Divine.

Of course, orthodox Judaism takes all this much further, and insists all the 613 commandments (the *mitzvoth*), as understood by the Rabbis, must be obeyed. Strictly speaking, any deviation from this principle would be a failure of belief in God. That may well be true – I do not here argue for or against it[29]. All I wish to do here is point out that we are to some extent conscious of God well before we reach our spiritual ideal.

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[27] Christian ideology (of Pauline origin, if I am not mistaken) is that faith suffices for salvation. But the purpose of this idea is to attract converts, by making that religion seem easy; it is an advertising ploy, to obtain a first commitment. I doubt if any Christian would seriously consider a mere declaration of faith sufficient. Faith still has to be proved in practice through certain good works; faith has to be lived out, through certain required behavior patterns (like loving your neighbor, for example). Some works are indeed discarded by the Christian faith-only doctrine; these are certain Judaic commandments, like the prohibition of pork or the need to wear prayer phylacteries. (A similar approach is found in Pure Land Buddhism, by the way: on the surface, faith is initially presented as enough; but thereafter, there is a teaching about good works. This includes, not only chanting a certain name, but various moral injunctions.)

[28] From the Judaic viewpoint, this would refer to the "laws for the children of Noah" (i.e. for humanity at large). This is considered ordinary "savoir vivre" (*derech eretz*, in Hebrew). It does not only include external actions, but the underlying thoughts (for example, if you hate your neighbor in your heart, overt displays of benevolence are hypocrisy).

[29] Although, as I have pointed out in *Judaic Logic*, belief in God does not necessarily imply belief in an alleged revelation from Him. The latter is an additional step, found in each of the Monotheistic religions in relation to a different "revelation". Similarly, within Judaism historically, there have been believers in the written law (Torah) who had doubts

This defines the Monotheistic equivalent of the Zen concept of being "already there". Another way to express the same thing is to remind us that we were created in God's image and likeness – i.e. that our deepest nature is God-like. This may be equivalent to the "original face" spoken of in Zen.

If one keeps this theoretical self-knowledge in mind, and constantly reminds oneself that one's soul is a bit of God's own holy spirit, one can hardly go wrong in practice. One will naturally engage in "imitation of God", doing one's best to honor this treasure within us and others, and not dishonor it in any way.

As of the moment I interiorize the Zen notion that I am one with the universe, or the Jewish notion that I am a piece of God, I am as good as "already there" (that is, here and now). I have already effectively awakened to the effervescence of existence, to the miracle of all that occurs. The distinction between this practice and some ultimate attainment as a result of it becomes, as the saying goes, "purely academic".

Nevertheless, paradoxically, all this is not intended as an argument to stop meditating! Why? Because if one does not meditate, one cannot *know* firsthand and experientially that one is "already there" – one can only at best "think so" by hearsay and conceptually, and that is simply not enough. One must keep meditating to advance, and it is only ongoing meditation practice that makes one's current spiritual level equivalent to the ideal level.

Thus, keep meditating! For without some spiritual practice, you sink back into gloomy darkness; while with practice, in one way or another, you are already (as above explained) effectively enlightened. It is that easy.

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relative to the so-called oral law (Talmud). I say all this quite objectively, without intending to advocate one position or another.

About this book

Unlike my other works, this is not principally a work on logic, but on meditation and spirituality. All the same, being a logician, I naturally evaluate all statements heard or made with logic in mind – so, in that sense, this is a work of applied logic.

In the present work, as in all those that preceded it, I attach great importance to epistemological issues. Religious traditions often present us with ready-made ideas or principles, without sufficiently considering their epistemological status – their logical consistency, their alleged exclusiveness, the means by which they were obtained, and so forth. Often, apologists for mystical doctrines, finding themselves somewhat distant from reason, choose to defend them by opposing them to reason.

A lot of my work, here, consists in showing that reconciliations are possible between mysticism and reason, although in some cases the doctrines under examination have to be modified somewhat to accord with logical standards.

Each book I have written has helped me improve my thinking on the subject concerned. At first I try to summarize my past and current thoughts, but so doing I open the door to their clarification and evolution. I clean up confusions and fill gaps, and move on to the next stage. Thus, a book is not only a status report, it pushes one forward. As for this book, just as soon as I started writing it, my meditation was improved.

Note that I write primarily to help myself advance philosophically and spiritually. I then share the product with eventual readers, in the hope of helping them and inspiring them, as other people have done for me. This personal involvement ensures my work is honest and sincere. It is offered to the public in all modesty – I intend no pretentious claim of supreme wisdom or great originality.

Avi Sion

"I went in and left myself outside"
(said by a Persian Sufi.)

Meditations was started in March and completed in July 2006.

RUMINATIONS

Sundry Notes and Essays on Logic

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Abstract.

Ruminations is a collection of sundry notes and essays on Logic. These complement and enrich the author's past writings, further analyzing or reviewing certain issues.

Among the many topics covered are:

- the importance of the laws of thought, and how they are applied using the logic of paradox;
- details of formal logic, including some important new insights on the nesting, merger and splitting up of hypothetical propositions;
- details of causal logic, including analogical reasoning from cause to cause;
- a cutting-edge phenomenological analysis of negation.

Additionally, this volume is used to publish a number of notes and essays previously only posted in the Internet site www.TheLogician.net, including a history of Jewish logic and an analysis of Islamic logic.

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The section headings in chapters 1-9 have been newly added in the present reprint for the reader's convenience.

Three chapters have been omitted from the present reprint: "J. S. Mill's Methods" (2005), which has been reprinted with *The Logic of Causation*; and "Addenda to *Judaic Logic*" (1997-2005) and "Diagrams for *Judaic Logic*" (2005), which have been reprinted with *Judaic Logic*. The remaining last chapters have been renumbered 10-14.

1. About the Laws of Thought

1. Dialectical Reasoning

The three "Laws of Thought" may be briefly explicated as follows:

1. *Thesis*: there are certain appearances; appearances appear.
2. *Antithesis*: there are incompatibilities between certain of these appearances; in such cases, one or both of them must be false.
3. *Synthesis*: some remaining appearances must be true; find out which!

We can in this perspective consider **dialectic** as a fundamental form of thought, through which knowledge is made to progress on and on. It is not a mere detail, an occasional thought-process, but a driving force, an engine, of thought.

The laws are not mere information, but calls to cognitive action. They enjoin proactive and curative cognitive measures, to ensure (as much as possible at any given time) continued verification, consistency and completeness.

(i) The law of identity tells us to seek out the facts and sort them out as well as we can. The purpose of this law is to instill in people a healthy respect for facts, in the course of observation and judgment. It is essentially a call to honesty, and submission to the verdict of truth. People often think, or act as if they think, that ignoring or denying unpleasant facts or arguments will make them 'go away' – the law of identity says 'no, they will not disappear, you must take them into consideration'.

Some people think that it is impossible for us to ignore that "A is A". Far from it! All of us often do so – as when we refuse to look at or admit the evidence or a logical demonstration; when we avoid reality or evade it having glimpsed it; when we lie to ourselves or to others; and so forth. If the law of identity were always obeyed by us, there would be no need to formulate it. Logic states the obvious, because it is often shunned.

(ii) When the law of non-contradiction says to us "you cannot at once both affirm and deny a proposition", it is also telling us that if we ever in the course of discourse encounter a situation where a proposition seems both true (for some reason) and false (for other reasons), ***we have to go back upstream in our discourse and find out where we went wrong in the course of it***[1]***, and we have to effect an appropriate correction such as to eliminate the difficulty***.

We are not just saying: "ah, there is a contradiction", and leaving it at that, nonplussed. No, we are impelled to seek a solution to the problem, i.e. to resolve the contradiction. We are inferring that there must be something wrong in our earlier thinking that led us to this conundrum, some error of observation or reasoning that requires treatment. So long as this situation is tolerated, and we cannot pinpoint the source of error, the credibility of all related knowledge is proportionately diminished. Consistency must be restored as soon as possible, or we risk putting all subsequent knowledge in doubt.

(iii) Similarly, the law of the excluded middle does not just inform us that "no proposition can be claimed neither true nor false". This law insists that if we find ourselves in such a situation, and it is indeed the case that both a proposition and its exact negation both seem false, we cannot let the matter rest or hope to find some compromise position – we have to eventually, as soon as possible, find good reason to opt for one side or the other. There is no logically acceptable middle ground, no avenue of escape.

These action implications inherent in the laws of thought may also be characterized as dialectical thinking. In this perspective, the "thesis" is our knowledge (or opinion) as it happens to be at a given time; the "antithesis" is the

[1] "Check your premises", Ayn Rand would say.

discovery of a logical flaw in that thesis, which causes us to have doubts about it and seek its review; and finally, the "synthesis" is the corrections we make in our premises, so as to resolve the difficulty encountered and obtain a less problematic new state of knowledge.

2. Genesis of Axioms

Axioms are not arbitrary, a-priori starting points of true human knowledge. They may be deductive or inductive, but in either case are to some extent *empirical* (in the large sense of 'phenomenological', i.e. without depending on any materialist or mentalist assumption concerning what is experienced).

Deductive axioms are established using certain positive or negative logical *arguments,* which we naturally find convincing. But even a deductive axiom relies on certain experiences, those *that gave rise to* the concepts and logical techniques involved in the proposition and its acknowledgment as an axiom.

The positive argument for an axiom is essentially dilemmatic: "whether this or that, so and so is true". An example is the axiom that diversity exists. The mere *seeming* of diversity is itself a case of diversity, sufficient to establish the fact of diversity. It is no use arguing (like Parmenides or the Buddha) that this apparent diversity is an "illusion", and that "all is really one" – because the coexistence of illusion and reality is itself an event of diversity. Thus, diversity truly exists, and cannot just be ignored. We might still try to uphold the thesis that reality is ultimately unitary, but only if we convincingly account for the fact of diversity.

Deductive axioms are also justified negatively through paradoxical logic, i.e. by showing that their contradictories are *self-contradictory*. For example, "There is no diversity" is a claim to diversity (since it involves many words, many letters, many sounds, etc.), and therefore self-contradictory; whence, it is *self-evident* that "There is some diversity". This argument may also be construed (as above) as dilemmatic in form: "whether you deny or affirm diversity, you affirm it".

Inductive axioms rely on some generalization, or (more broadly) adduction, from experience; but such inductive process in their case is not ever likely to be in need of revision. Many truths of utility to epistemology are inductive, and yet once realized remain immutable; they thus behave largely like deductive axioms, and may by analogy be classed as inductive axioms.[2]

For example, the fact that most of our beliefs are contextual is a non-contextual truth, though based on common observation. The awareness that most of our knowledge is empirical, and subject to revision as new experiences are encountered, that it is in constant flux, altering and growing – this is a broad observation that once realized will not be affected by any further empirical data. This observation is not useless, note well: it logically affects pursuit of knowledge, teaching us to remain aware of the non-finality of most of our beliefs.

But note also, the said principle of contextuality is pretty vague; it cannot by itself put specific knowledge in doubt (i.e. without some other more specific reason for doubt). Another example of such general but unspecific truth is the principle (derived from the law of the excluded middle) that "there is always some explanation". This optimistic principle serves to encourage research, but does not tell us what the solution of the problem is specifically.

3. Paradoxical Propositions

A (single) paradoxical proposition has the form "if P, then notP" or "if notP, then P", where P is any form of proposition. It is important to understand that ***such propositions are logically quite legitimate within discourse: a (single) paradox is not a contradiction***. On the other hand, a double paradox, i.e. a claim that both "if P, then notP" *and* "if notP, then P" are true in a given case of P, is indeed a contradiction.

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[2] Indeed, it could be argued that, since 'deductive' axioms all have some empirical basis (as already explicated), they are ultimately just a special case of 'inductive' axiom.

The law of non-contradiction states that the conjunction "P and notP" is logically impossible; i.e. contradictory propositions cannot both be true. Likewise, the law of the excluded middle states that "notP and not-notP" is logically unacceptable. The reason for these laws is that such situations of antinomy put us in a cognitive quandary – we are left with no way out of the logical difficulty, no solution to the inherent problem.

On the other hand, single paradox poses no such threat to rational thought. It leaves us with a logical way out – namely, denial of the antecedent (as self-contradictory) and affirmation of the consequent (as self-evident). The proposition "if P, then notP" logically implies "notP", and the proposition "if notP, then P" logically implies "P". Thus, barring double paradox, *a proposition that implies its own negation is necessarily false, and a proposition that is implied by its own negation is necessarily true*.

It follows, by the way, that the conjunction of these two hypothetical propositions, i.e. double paradox, is a breach of the law of non-contradiction, since it results in the compound conclusion that "P and notP are both true". Double paradox also breaches the law of the excluded middle, since it equally implies "P and notP are both false".

These various inferences may be proved and elucidated in a variety of ways:

- Since a hypothetical proposition like "if x, then y" means "x and not y is impossible" – it follows that "if P, then notP" means "P and not notP are impossible" (i.e. P is impossible), and "if notP, then P" means "notP and not P are impossible" (i.e. notP is impossible). Note this explanation well.

  We know that the negation of P is the same as notP, and the negation of notP equals P, thanks to the laws of non-contradiction and of the excluded middle. Also, by the law of identity, repeating the name of an object does not double up the object: it remains one and the same; therefore, the conjunction "P and P" is equivalent to "P" and the conjunction "notP and notP" is equivalent to "notP".

  Notice that the meaning of "if P, then notP" is "(P and not notP) is *impossible*". Thus, although this implies "notP is true", it does *not* follow that "if notP is true, P implies notP". Similarly, *mutadis mutandis*, for "if notP, then P". We are here concerned with strict implication (logical necessity), not with so-called material implication.

  The reason why this strict position is necessary is that in practice, truth and falsehood are contextual – most of what we believe true today might tomorrow turn out to be false, and vice-versa. On the other hand, logical necessity or impossibility refer to a much stronger relation, which in principle once established should not vary with changes in knowledge context: it applies to *all* conceivable contexts.

- Since a hypothetical proposition like "if x, then y" can be recast as "if x, then (x and y)" - it follows that "if P, then notP" equals "if P, then (P and notP)", and "if notP, then P" equals "if notP, then (notP and P)". In this perspective, a self-contradictory proposition implies a contradiction; since contradiction is logically impermissible, it follows that such a proposition must be false and its contradictory must be true. This can be expressed by way of apodosis, in which the laws of thought provide the categorical minor premise, making it possible for us to exceptionally draw a categorical conclusion from a hypothetical premise.

  If P, then (P and notP)
  but: not(P and notP)
  therefore, not P

  If notP, then (notP and P)
  but: not(notP and P)
  therefore, not notP

- We can also treat these inferences by way of dilemma, combining the given "if P, then notP" with "if notP, then notP" (the latter from the law of identity); or likewise, "if notP, then P" with "if P, then P". This gives us, constructively:

  If P then notP – and if notP then notP
  but: either P or notP
  therefore, notP

If notP then P – and if P then P
but: either notP or P
therefore, P

Paradox sometimes has remote outcomes. For instance, suppose Q implies P, and P implies notP (which as we saw can be rewritten as P implies both P and notP). Combining these propositions in a syllogism we obtain the conclusion "if Q, then P and notP". The latter is also a paradoxical proposition, whose conclusion is "notQ", even though the contradiction in the consequent does not directly concern the antecedent. Similarly, non-exclusion of the middle may appear in the form "if Q, then neither P nor notP". Such propositions are also encountered in practice.

It is interesting that these forms, "Q implies (P and notP), therefore Q is false" and "Q implies (not P and not notP), therefore Q is false", are the arguments implicit in our application of the corresponding laws of thought. When we come across an antinomy in knowledge, we dialectically seek to rid ourselves of it **by finding and repairing some *earlier* error(s) of observation or reasoning**. Thus, paradoxical argument is not only a derivative of the laws of thought, but more broadly the very way in which we regularly apply them in practice.

That is, the dialectical process we use following discovery of a contradiction or an excluded middle (or for that matter a breach of the law of identity) means that we believe that:

Every apparent occurrence of antinomy is in reality an illusion.

It is an illusion *due to paradox,* i.e. it means that *some of the premise(s)* that led to this apparently contradictory or middle-excluding conclusion are in error and in need of correction. The antinomy is never categorical, but hypothetical; it is a sign of and dependent on some wrong previous supposition or assumption. The apparent antinomy serves knowledge by revealing some flaw in its totality, and encouraging us to review our past thinking.

Contradiction and paradox are closely related, but not the same thing. Paradox (i.e. single not double paradox) is not equivalent to antinomy. We may look upon them as cognitive difficulties of different degrees. In this perspective, whereas categorical antinomy would be a dead-end, blocking any further thought—paradox is a milder (more hypothetical) degree of contradiction, one open to resolution.

We see from all the preceding (and from other observations below) the crucial role that paradox plays in logic. The logic of paradoxical propositions does not merely concern some far out special cases like the liar paradox. It is an essential tool in the enterprise of knowledge, helping us to establish the fundaments of thought and generally keeping our thinking free of logical impurities.

Understanding of the paradoxical forms is not a discovery of modern logic[3], although relatively recent (dating perhaps from 14th Cent. CE Scholastic logic).

4. Contradiction

Many people misunderstand what we logicians mean by 'contradiction'. The contradictory of a term 'A' is its negation, 'not A', which refers to anything and everything in the universe other than A, i.e. wherever precisely A is absent in the world. The relation of contradiction between A and not-A is mutual, reversible, perfectly symmetrical.

The presence of something (A) excludes its absence (i.e. not A) in that very same thing, and vice versa, if all coordinates of space and time are identical. However, this does not exclude the logical possibility that the same thing may be partly A and partly not A. Thus, the law of thought 'either A or not A' can also be stated more quantitatively as "either 'all A' or 'all not A' or 'part A and part not A".

[3] For instance, Charles Pierce (USA, 1839-1914) noticed that some propositions imply all others. I do not know if he realized this is a property of self-contradictory or logically impossible propositions; and that self-evident or necessary propositions have the opposite property of being implied by all others. I suspect he was thinking in terms of material rather than strict implication.

Some people appeal to this possibility of three alternatives as an argument *against* the laws of thought! But that is a misunderstanding – or worse, deliberate sophistry.

If something, e.g. 'B', implies but is not implied by not-A, it (i.e. B) is as 'incompatible' with A as not-A is, but it is not contradictory to A: it is merely *contrary* to A. The contradictory not-A of A differs from A's contraries in that *the absence* of not-A implies A, whereas in the case of mere contraries like B (or B1 or B2… etc.) this added logical relation of 'exhaustiveness' does not apply.

When contradictories are placed in a disjunction, 'either A or not-A', the disjunction involved signifies both mutual exclusion ('or', meaning 'not together') and exhaustiveness ('either', meaning 'and there is no other alternative'). It intends: if 'A', then not 'not-A'; and if not 'A', then 'not-A'.

On the other hand, any number of contraries can be placed in a disjunction: 'A or B or B1 or B2… etc.', so that the presence of any disjunct implies the absence of all the others; but such disjunction is not exhaustive, unless we specify that the list of contraries in it is complete. If that list *is* indeed complete, then the negation of all but one of the disjuncts implies the affirmation of the remaining one. Thus, 'not-A' can be equated to the exhaustive disjunction of all things in the world 'contrary to A'.

Something *different* from A, e.g. 'C', is not necessarily contradictory or even contrary to A. **The mere fact of difference does not imply incompatibility**. Different things (like A and C) may be compatible, i.e. capable of coexistence in the same thing, at the same time and place. 'Difference' simply signifies that we are *able to distinguish* between the things concerned: i.e. they are not one and the same when they appear before our consciousness. 'Similar' things may be the same in appearance, but not one (e.g. two instances of the same kind); or they may be one (i.e. parts of a single whole), yet not the same.

Thus, for example, the logical relation between the colors black and white depends on how precisely we focus on them. They are different, since distinguishable. Since they may coexist on different parts of the same surface, they are broadly compatible. However, as such or *per se*, they are contrary; that is to say: if I perceive a surface or part of surface as totally white, and you perceive *the very same* place and time as totally black, our claims are incompatible[4]. This irreconcilability is not a contradiction, however, because it is possible for a surface to be neither black nor white.

5. Varieties of Contradiction

The expression '**contradiction in terms**' refers to a compound term composed of incompatible elements, such as 'A and not A' or 'A and B (where B is contrary to A)'. Such a mixed-up term may be said to be paradoxical, as well as internally inconsistent, since it implies that contradiction is possible, so that the laws of thought are denied by it, and then (by generalization, if you like) 'anything goes' including denial of the 'A and not A' conjunction.

> For example, the term "illusory reality" is a contradiction in terms. On the other hand, note, terms like 'an inhuman human' or 'an anti-Semitic Jew' are not strictly speaking contradictions in terms; they refer to natural possibilities of conjunction, only the terminology used makes them superficially seem contradictory (i.e. there are people who behave inhumanly, or Jews that hate their own people).

The proposition 'A is not A' (or 'some thing that is A is also not A'), being self-contradictory, implies 'A is A', its contradictory form. This statement should be explicitly acknowledged, though obvious, because it correlates two important concepts, viz. 'internal inconsistency' and 'the logic of paradoxes'.

The statement 'A is not A' is logically impossible, because it both affirms and denies the same thing. Therefore, the opposite statement is true. That statement, i.e. 'A is A', is logically necessary, because *even its contradictory* 'A is not A' implies it.

Whoever claims 'A is not A' is admitting 'A is A' – ***ipse dixit***, he himself said it! Whereas, whoever claims 'A is A' is consistent with himself.

Self-contradiction consists of three items:

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[4] Our disagreement is not terminological, note. We have in the past agreed as to what experiences 'black' and 'white' correspond to; here, we suddenly diverge.

1. The proposition in question, call it P.
2. The admission that it is *an assertoric statement*, i.e. one that affirms or denies something.
3. The admission that all assertoric statements *involve claims* to consciousness, to knowledge, to truth, etc.

Thus, given P (e.g. "reality is unknowable"), admit that P implies "this is an assertion" – but all assertions imply some knowledge of reality – *therefore*, P implies non-P. There is a process from P to its negation, which Logic demands we acknowledge. That demand cannot be refused without committing the very same self-contradiction. This is not a circular or ad infinitum proof, but an appeal to honesty, without which no dialogue is possible.

That all assertoric propositions assert is an aspect of the Law of Identity. The Law of Non-contradiction may be discerned in the argument: All assertions assert something; P is an assertion; therefore, P asserts; whence, if P denies asserting, P implies non-P. The Law of the Excluded Middle is also implicit here, in the awareness that we have no choice but to firmly disown P.

6. Double Standards

Contradictions appear in discourse in many guises. They are not always overt, but may be hidden in the fact of making a statement or in the standards of judgment used.

A claim may be paradoxical because it **inherently entails** its own contradiction, although it does not on the surface seem to be self-inconsistent. Such implication is not always formal but requires awareness of the meaning of the terms used. This form of indirect self-contradiction has been called "the Stolen Concept fallacy"[5].

For instance, the skeptical claim "I know nothing" may be rejected as self-contradictory, because as soon as someone makes it – someone *who understands and intends the meaning* of the terms "I", "know" and "nothing" – that is by itself proof absolute that the person concerned "knows" *some*thing, whence the original claim (of total ignorance) is shown up to be unavoidably contradictory and thus necessarily false.

Thus, in cases of this sort, the tacit implication involved is that one of the terms used (knowing nothing) implicitly includes the act in question (knowing that I know nothing), as a case in point contradictory to the explicit claim. (Rephrasing the said statement as "I do *not* know anything" does not change its underlying assumptions, needless to say.)

There are countless examples of such inherent self-contradiction. Saying "I have nothing to say" is saying something. Claiming "We have no memory" is self-contradictory, because each term in it presupposes a word, concept and background experiences remembered by the speaker – and the hearer too. An amusing common example is "I do not speak a word of English"!

Another important form of covert self-inconsistency is the use of **a double standard**. This consists in applying less stringent standards of judgment to one's own discourse than to the discourse of one's intellectual opponents. A lot of philosophical, and particularly political and religious, discourse resorts to such inequitable methodology.

The contradiction involved in a double standard is apparent the moment we step back and view its user's knowledge and methodology as a whole. In this wider perspective, the user of a double standard is clearly inconsistent with himself, even if his discourse viewed piecemeal may superficially seem self-consistent.

> Whole philosophies may be based on such fallacious reasoning. For instance, Phenomenalism sets as a general standard a limitation of knowledge to sensory data without allowing extrapolations from them to assumed external material objects – yet it does not criticize its own adductions using the same rigid standard.

There are two ways this fallacy may be committed: one may use relaxed standards on one's own discourse, while seemingly applying universal norms to one's opponents' discourse; or one may appear to apply universal norms to oneself, while concocting overly strict norms for them. One may *exempt oneself* from the usual logical rules, or one may make unusual logical *demands on others*.

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[5] By Ayn Rand and (I think) Nathaniel Branden.

In either case, the holder of a double standard is in conflict with logic's requirement of uniformity. An assumption of reason is that all humans are epistemologically on the same plane. Equity is an aspect of 'common sense'. Experience and logic have to be used to convince oneself and others, not sophistical manipulation or authority.
Standards of judgment have to be fair and universal; all discourse must be equally treated. If differences are advocated, they have to be convincingly justified. The principle of equality admittedly involves generalization; but the onus of proof is on any proposed particularization of it.
An example of a double standard is the appeal to cultural relativism. One may seek to rationalize ideas or thought processes that are contrary to ordinary reason, by claiming them to belong to a different cultural framework. Such tolerance seems on the surface friendly and open-minded, but it is proposed without full consideration of its negative human and epistemological implications.

7. Special Status of the Laws

The three **Laws of Thought** must not be construed as some prejudice of Aristotle's, which some scientific discovery – like the particle-wave duality or the relativity of space-time measurements – could conceivably raise doubt about or displace. These laws of thought are intended as perfectly neutral; they make no direct, specific ontological or epistemological claim, but rationally sort out the very act and concept of such claims – whence their name.
These laws express the ways we assimilate complex experiences, and resolve difficulties in the course of thought (concepts, propositions and arguments). Only by such logic can we 'make sense' of the world around us and in us. By making these truths explicit, Aristotle made it possible for humans to henceforth consciously practice the logic they were already unconsciously tending to.
These laws *exclude, ab initio*, the notion that something could both have and lack some property, or neither have nor lack it – *at the same place and time and in the same respects*. The latter specification, which Aristotle clearly and repeatedly stressed, is often ignored by those who consider these laws expendable.
That, say, a stone is blue on one side and red on the other, is not a contradiction, since the different colors are in different parts of it. That over time the colors may change is not an antinomy either: the concept of time is intended to ensure that. That you and I view the same object from different angles, and see different aspects of it, is no surprise. That my view of the world and yours are not quite identical, is quite understandable in view of the different context of experience and thought we each have.
The laws of thought do not evade or deny the *appearance* of contradictions or unsolved problems; they just tell us that such appearances are *illusions, not realities*. They are designed precisely to help us take such apparent discrepancies into consideration and resolve them in some way. We continue to need the same laws of thought in the more complex cases uncovered by modern physics.
The theory of relativity is precisely an attempt to rationalize the surprising empirical constancy in the velocity of light, whichever direction we measure it from. The theory is not a statement that there are no absolute truths, but a statement that such and such a way of looking at the surprising events discovered makes them rationally comprehensible. The theory affirms that this way is probably (i.e. inductively) the best explanation, and effectively denies those who contradict it (unless they come up with an inductively better explanation, more in line with the empirical findings). It does not deny the laws of thought, but is an application of them.
Similarly, the discovery that the same things may behave occasionally as particles and occasionally as waves does not constitute an argument against the laws of thought. Whether we interpret this duality epistemologically or ontologically, as due to different circumstances of observation or different material circumstances, it is affirmed to be a mysterious finding that must be faced. This realist attitude is precisely what the laws of thought demand. Any attempt to interpret the finding, one way or the other, is again an attempt to make the finding rationally comprehensible, so that we do not feel them logically impossible.
Under no circumstances may scientists or philosophers seriously claim the laws of thought to be abrogated. Such a claim is self-contradictory – because then its opposite is equally acceptable. It is therefore as if nothing has been said. It is the denial of reason, the institution of madness. The three laws of thought thus together constitute *the most incontrovertible and universal frame of reference of rational thought*.

Note also, the emphasis the laws of thought lay on *existence*. A common error of deniers of these laws is to regard 'non-existence' as just some other sort of existence, a parallel world or a location beyond space and time *from* which new existents come and *to* which finished existents go! These people are misled by linguistic habit into a *reification* of the word 'non-existence'.
Whatever positively appears, exists to that extent. Existence becomes open to doubt to the extent that we add assumptions to appearance – i.e. we adductively guess what might lie beyond them. At this stage, the reality vs. illusion dichotomy arises. At this stage, too, the rational act of *negation* comes into play – when we say: this is apparent, but (since it gives rise to some antinomy) it is *not* real, it is illusory.
The 'concept' of *non*-existence thus has no direct empirical basis of its own. It is based on a rational act relative to experiences of existence. It is just a figment of the imagination, a mental dumping place for *ideas* that have failed the test of existential basis.

8. Motors of Rational Thought

It is important to realize that the laws of thought are **the motors of rational thought**. They generate questions and the pursuit of answers; they feed curiosity and fuel research. If we are satisfied with the way things seem, however contradictory or incomplete they seem, thought is arrested. We lose perspective and become ignorant. We lose intelligence and become stupid. We lose touch with reality and become insane.
Consider the *irrelevancy* to science of a hypothetical denial of the laws of thought. For instance, according to Einstein's theory of relativity, nothing can travel faster than light, yet it has been found that particles may affect each other instantaneously even though they are far apart. If in the face of such an apparent contradiction we just said: "oh, well, I guess the law of contradiction must be wrong!" and left it at that – would we be consoled? Clearly, not – this would not honestly solve the problem for us, but merely sweep it under the carpet. Our minds would not rest till some deeper, more convincing explanation was found.
Accepting contradiction is just simplistic and evasive. Similarly, with breaches of the law of the excluded middle: if you ask me a question, and inquire is X the answer or not X? and I reply, it is neither, but some third thing: will you be satisfied with such reply? Your knowledge of the issue at hand is not made complete by such reply; a gap remains, which can only be filled by either X or nonX. The law of the excluded middle is just a recognition of the *inadequacy* of such neither-nor replies.

9. Cogito, Ergo Sum

Descartes' "*cogito, ergo sum*"[6] is composed of two self-evident propositions: "I think" (in the sense, I am conscious) and "I am" (I exist). For the contradictory of each of these propositions is self-contradictory, i.e. involves a stolen concept and gives rise to a paradox. Thus, "I am not conscious" could not be thought or said (or for that matter heard or understood) without being conscious. Similarly, "I am not" could not be expressed (or observed) without existing. Thus, Descartes was quite right in regarding these propositions as axioms; i.e. as first principles, which do not depend on prior principles.
Note moreover that these two clauses are axiomatically true independently of each other – So what about the *ergo*, which suggests that the *sum* follows from the *cogito*? Is the "therefore" perhaps meant to imply an order of knowledge, rather than an inference? One could formally deduce existence from consciousness, in the sense that a conscious being is a fortiori an existent being; but one would never in practice resort to such inference.
In practice, in my opinion, we are conscious of other things before we become conscious that we are conscious of them – so it would not be correct to place the "I think" before the "I am". It could be argued that a baby may first experience inner states, but I would reply that such states are results of prior sensations. We may however support

[6] See Hamlyn, p. 137. The comments made here are not intended as an exhaustive analysis of the *cogito* statement, needless to say.

Descartes' order, by considering it a logical one, in the sense that if the Subject did not have the power of consciousness, he or she would not be aware of existence. That is, it perhaps means: "I can think, therefore I can know that I am".

But I think the correct interpretation is the following: when we are aware of something, any thing, this provides *an occasion to become aware of oneself*, i.e. that there is a Subject who is being conscious of that thing, whatever it is. Thus, the first clause of the sentence is not strictly: "*I* think", but: "consciousness of things is taking place" (or "thought is occurring"). Whence the second clause is truly *inductively* inferred, i.e. we may well hypothesize that "there is something being conscious of things", i.e. "thought has a Subject as well as an Object", i.e. "there is an I" (or "I exist").

It is *the self* that is inferred from the appearance of objects – reason argues: they must appear before someone. This is what distinguishes appearance from mere existence: it occurs *through* 'cognition' *by* 'someone'. Thus, Descartes is justifying our habitual assumption of a cognizing Subject from the fact of cognition. It is not mere grammatical convention, he tells us, but "think" *implies* "I".

10. Concerning Identity

Where does a material object begin or end[7], in view of the constant flow of particles and energy in and out of it, even (over a long enough time) in the case of apparent solids? We have to use the *apparent limits* of things as their space-time definition. Or more precisely, in acknowledgment of the above difficulties, their *illusory limits*. Thus, knowledge of matter is built on arbitrary, knowingly inaccurate, delimitations of "things".

We can similarly argue concerning mental objects (i.e. images, sounds, etc.). At first thought, their limits seem obvious; but upon reflection, they become doubtful – imprecise and insecure. And this being the case, we cannot convincingly argue that the limits of material bodies are mental projections. If the limits of mental lines are unsure, then the limits of whatever they are intended to delimit are still unsure.

Ultimately, then, since we cannot even mentally delimit mental or material things, all delimitations are merely verbal artifices, i.e. *claims we cannot substantiate*. This remark concerns not only 'borderline' cases, but all material or mental objects.

These are very radical queries, productive of grave skepticism. They are principles of vagueness and doubt much more unsettling than the Uncertainty Principle, since they more basically question the validity of any geometry (and therefore, more broadly, of mathematics and physics).

When some Greek or Indian philosophers expressed skepticism at the possibility of human knowledge, this is perhaps what they were referring to. If one cannot delimit things, how can one produce precise concepts and propositions? And without precision, how can we judge them true or false?

Whereas denial of knowledge as such is self-contradictory, denial of *accurate* knowledge is not so. It is possible to observe the general vagueness of experience without denying the law of identity. If cloudiness is the identity of things, or we are simply incapable of sufficiently focusing our senses to get past such cloudiness, we simply remain stuck at that level of experience, like it or not.

The best counterargument I can muster is that phenomenological knowledge is still knowledge of sorts, and this can be used as a springboard to arrive at deeper knowledge, by means of *adduction*. That is, we can still formulate ontological hypotheses, capable of ongoing confirmation or rejection with reference to reason and experience, even if the epistemological status of the latter is at the outset merely phenomenological.

This does not directly overcome the difficulty of measurement, but it gives us some hope that we might succeed indirectly. I leave the issue open, and move on.

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[7] I have already discussed this ontological issue in *Phenomenology*, chapter 4.5.

2. About Induction

1. Critical thought

Critical thought, or criticism, is considering the truth or falsehood of an idea – not only its truth, and not only its falsehood, either. It is not essentially a negative, anymore than positive, penchant, but an attitude of rigorous review in judgment, of keeping our standards high.

What makes a theory "scientific", in the strict sense, is not whether it emanates from some prestigious personage or institution or corporation, but whether a maximum of care has been taken to formulate it and test it in accord with all known criteria of inductive and deductive logic. Science does not primarily mean, as some imagine, lab technicians with white aprons or university professors, or the exact sciences or mathematical equations. The term "science" initially refers to serious study, or to pursuit of knowledge as against mere opinion. It signifies a sustained effort of sound methodology, as currently possible and appropriate to the field of study concerned.

2. Misappropriation

The most common logical fallacy is perhaps **the misappropriation of logical expressions** – using the language of logic, without having in fact resorted to logical processes. This often suffices to convince some people.

For examples: one might say: "it is a reasonable assumption that…" when one has made no attempt to logically check the issue out; or: "it may be inferred that…" when no deductive or even inductive logical process allows such inference. One gives the impression of logic, but without factual basis. Words like "it must be that", "a fortiori", "in conclusion", "because of", etc., are freely used as alibis, in lieu of logic, in the way of mimicry, when logic was in fact ignored or opposed.

Of course, such behavior in discourse is not always intentional dishonesty. It is often due to ignorance of logic or lack of logical skill, or even just to inattentive, vague and imprecise thinking. In particular, many people are not aware of *the difference between strictly deductive inference and merely inductive inference* – these two logical modes being all the same to them. Sometimes, even though their reasoning was sound and its results plausible, they are just not aware exactly how they did it.

> An example of intentional dishonesty is the discourse of Nagarjuna, which as I show in *Buddhist Illogic* is replete with pretended logic.
>
> Another notable example of pseudo-logical discourse is Sigmund Freud's "*Moses and Monotheism*". His method there can be characterized as *false advertising* and *creeping annexation*. He says he won't engage in some form of argument (which would be too obviously logically illicit or unscientific); and then, in the very next breath or gradually thereafter, he goes ahead and inserts that very argument into his discourse (to justify his prejudices). He loudly acknowledges the argument to be invalid (so as to give the impression that his approach is virtuously objective and scientific); then, coolly ignoring the very methodological imperatives he has just admitted, he hammers home his (foregone) 'conclusions'. It is psychological manipulation. He relies on the prestige acquired in his field to pass over lies concerning another field.[1]

[1] It is my wish to analyze that whole book in detail someday, so as to show up the cunning and variety of his tricks.

3. Evidence

Every experience (concrete appearance – physical or mental percept, or intuition) is 'evident', in the sense that it is manifest before consciousness and that such appearance automatically gives it a minimum of credibility.
Concepts or theses (products of abstraction) are not themselves evident in this sense (though they too 'appear' in a sense), but rely for their credibility on their relation to certain experiences. An experience is 'evidence for' some concept or thesis, when it serves to confirm it adductively. A concept or thesis is 'evidently true' to the degree that such evidence for it is to be found.
A concept or thesis is said to be 'immediately evident', when very little effort is required to establish its truth, i.e. when the evidence that suffices to do so is readily available to everyone.
A concept or thesis is 'self-evident' (or evident by itself), if it is provable without reference to further experiential evidence (other than the minimum experience underlying its very conception or formulation). Such proof is achieved by noticing or showing the negation of the concept or thesis to involve an inconsistency or a self-contradiction of some sort.
We label 'obvious', then, all experiences (as such, i.e. in and for themselves), as well as 'immediately evident' and 'self-evident' concepts or theses.

4. Detail

An important criterion for the credibility of theories is the **degree of detail** they propose. For instance, the immediate Creation theory is vague, whereas the gradual Evolution theory offers detailed descriptions of entities and processes. But of course, even the most detailed theory may turn out to be false. The existence of elaborate fictions in the form of novels (or scientific hoaxes presented as fact) shows that detail is not by itself proof.
One should also distinguish between **explaining** (e.g. fossils are leftovers of creatures that lived on earth in times past) and **explaining-away** (e.g. fossils are mere artifacts placed on earth by God to test people's faith). The former is generally preferable to the latter. Though here again, the criterion is not determining.

5. Seems and Is

The following are some of the **inductive arguments** which help clarify *the logical relations between the copulae 'seems' and 'is'*:

Uncertain mood:
P seems true and NotP seems equally true;
therefore (for this observer, at this time):
P 'may be' true, and equally NotP 'may be' true.

Probabilistic mood:
P seems true more than NotP seems true;
therefore (for this observer, at this time):
P 'is probably' true, and NotP 'is probably not' true.

Decisive mood:
P seems true and NotP does not seem true;
therefore (for this observer, at this time):
P 'is' true, and NotP 'is not' true.

6. Adduction

Adductive inference often takes the form of a deductively invalid syllogism, such as:

> All Z are Y, and
> these X are Y;
> therefore, these X are probably Z.

Of course, strictly speaking the conclusion does not follow from the premises; however, the premises do *suggest some likelihood* for the conclusion.
For example, "all beans in your bag are white, and the beans in your hand are white; therefore, the beans in your hand are probably from your bag."

7. Pertinence

Pertinence might be explicated as the construction of an appropriate major premise, so that a given minor premise is enabled to yield the proposed conclusion. (I am thinking here of my findings in a-fortiori logic, generalizing the way we comprehend certain Biblical statements as inferences by interposing a presumed tacit major premise.[2])
How is the missing major premise discovered? It is not found by some direct, infallible insight – but as in all our knowledge (although we may not be consciously aware of these mental processes), it is arrived at inductively, by means of trial and error.
There may in fact be several alternative major premises, equally able to fulfill the required task of making the inference possible – equally pertinent. We may be aware of only some of these available possibilities.
We start by proposing a likely candidate for the post of major premise. This may at first glance seem like the most likely hypothesis. Later, we may change our minds, considering that the candidate does not fit in our overall context of knowledge in some respect(s). For instance, the proposed major premise might be more general than necessary, so that although it allows us to draw the desired conclusion in the present narrow context, it causes some havoc in a wider perspective. In such case, we propose a less general major premise or a considerably different one; and so on, till we are satisfied.
A hypothesis proposed is 'pertinent', if it can do the job at hand, which is to infer the desired conclusion from the given (minor) premise, even if it turns out to be rejected because it does not fit into the broader context. A proposed major premise incapable of fulfilling this role is 'impertinent'.

8. Trial and Error

With regard to the trial and error involved in adduction: "trial" means trying an idea out in practice, testing a theory by observation; and "error" means that some of the ideas we test will fail the test and thus be eliminated from further consideration or at least adjusted.
This is a rather broad notion. There are perhaps numerous, distinguishable types of 'trial and error' – in different fields of study, in different situations – which we ought to distinguish and list. I do not attempt it here.
It should in any case be stressed that this simple method is pervasive in our pursuit of knowledge. Already at the level of sensation, we are using it all the time. For instance, when we smell food to check out if it is fresh, we are using this method. At the level of concept formation, we again repeatedly appeal to it. E.g. when we try out different definitions for a group of things that seem similar, we are using this method. Similarly, when we formulate individual propositions or compounds of many propositions, we use trial and error.

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[2] See *Judaic Logic*, chapter 4.2.

Trial and error is not just a 'scientific method' for high level theoreticians and experimenters – it is the basic way to knowledge by mankind, and indeed by all sentient beings. It is 'adaptation' to the environment in the domain of knowledge, a subset of biological adaptation applicable to conscious organisms.

9. Field Specific

Each field of study has methods and parameters **peculiar** to it, as well as many that are found in common with other fields. We may thus refer to specialized principles of logic.

For example, the logic of historical research (historiology) would demand that the various forms of evidence – physical remnants (artifacts, drawings, writings, etc.), behavioral indices (traditions handed down), as well as verbal sources (witnesses, second-hand contemporary testimony, historians' later claims, etc.) – be clearly categorized and distinguished from each other, and their relative weight as evidence be assessed as objectively as possible.

10. The Human Factor

Induction depends greatly on the human factor – on our intelligence (in some cases, genius), on our open-mindedness, on the clarity and rigor of our thinking, and on the detachment and carefulness of our reasoning and experimentation.

When theorizing and setting up tests to confirm or reject our theories, it is important to make a big effort to foresee all conceivable explanations and all their possible implications. If the theories considered are not all the theories conceivable in the present context, or if we do not correctly work out their respective experimental predictions, our inductive conclusions are bound to be faulty and misleading.

> The danger could be illustrated with the following example from the history of science[3]. At one time, people thought that tiny living organisms could be 'spontaneously generated' – e.g. maggots could appear out of nowhere in rotting meat. This seemed contrary to the thesis that all life was created in the first week, for instance. To resolve the issue, a scientist called Francesco Redi (Italy, 1626-97) devised an experiment in 1668, enclosing meat in a container flies could not penetrate and observing whether flies emerged in it. As it turned out, no flies emerged from within the meat, leading Redi to the conclusion that flies lay eggs and in this case were prevented from doing so.
>
> So well and good. However, suppose Redi *had* found flies in the meat, would he have drawn the conclusion that flies are spontaneously generated? He would have been tempted to do so, since (as far as I was told) he did not foresee alternative theses, such as that flies' eggs might be carried to the meat like pollen or always present in it like bacteria. If that had been the case, Redi's inference from the appearance of flies in the meat would have been erroneous. We see from this example the importance of conceiving all possible alternative explanations for a phenomenon, before testing one's theories.

Note in passing that this is an example of what J. S. Mill much later called 'the method of residues'. The alternative explanations are listed, then tried out and eliminated one by one, leaving one theory we can still rely on. Of course, the reliability of the residual theory depends on the exhaustiveness of the original list of theories. If all theories are eliminated, we know (from the law of the excluded middle) we need to somehow conceive one more. Sometimes we lack the necessary intelligence or information for that.

A current example of this is the debate in the USA between Creationists and Darwinists. The latter support Darwin's theory of evolution, and point to the plentiful and varied empirical evidence over billions of years for it (though the issue of origin remains unresolved); while the former support the Biblical idea of sudden emergence

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[3] I noted this example in the course of a lecture long ago, so I cannot guarantee my present rendition is entirely accurate. But no matter, I only include it here for purposes of illustration.

of life just a few thousand years ago and suggest "intelligent design" as an alternative outlook. Each group considers that the other's ideas should not be taught in the classroom.
But, it seems to me, the idea of Divine creation (apart from other specifics of the Biblical narrative) is strictly speaking compatible with Darwinism, if we grant that God chose to institute 'chance' evolution (i.e. spontaneous genetic mutations and environmental selection) as the way the life He created in nature would proceed thenceforth. A third alternative is thus conceivable, which reconciles the conflicting theses and allows biology to be peacefully taught in the classroom.

11. Theorizing

Theorizing is of course not a one-time, static thing, but an ongoing, changing process.
An old theory may be replaced a new one, either because *the facts* currently faced are not covered by the old theory or because some *logical or conceptual* imperfection or inadequacy has been found in it. The new theory may not be much different from the old, a mere adjustment of it, but it must in any case bring something extra to bear, either a wider capacity to explain facts or some sort of logical improvement or conceptual clarification.
In setting standards for theorizing, we must highlight ***the fallacy of relying on "somehows"*** as a way to leap over *holes* in one's theories. This may be viewed as one of the ways people "jump to conclusions".

> For example, to defend the idea of theodicy (Divine justice or karma), we posit a thesis of reincarnation (in this world or another). That is, seeing the injustice evident in everyday life, we first think there must be some hidden guilt in the life of the victim, and that unpunished criminals will be dealt with before their life is through. We assume that, in the long run, over the course of a whole life, apparent discrepancies are canceled out and equilibrium is restored. But then, realizing that this too is evidently not empirically true we assume reincarnation as an explanation. For instance, children are sometimes raped or murdered; and since these are clearly innocent victims within their current life, granting that children are not punished for their parent's sins, the assumption of justice makes us suppose that they committed commensurate crime in a past life. Similarly, for an evidently unpunished criminal, it is assumed that Divine justice will punish him in an afterworld, or that karma will do so in a future life.[4]

In cases like this, the big fallacy is to be satisfied with a "somehow" to fill the gaps in our hypothesis. In the case of reincarnation, for instance, the theory should not be accepted unless *an exact description of events* in the transition from body to body were proposed, combined with *a set of testable predictions* that would make possible at least some empirical confirmation of the thesis (besides the events it is designed to explain). The *apparent* support that a *vague* reincarnation thesis gives to the *foregone* conclusion that "there is always justice" is not sufficient.
There are almost always hidden obscurities in our theories: the vagueness of some term, the lack of clarity of some proposition, the jumping to conclusions in some argument. Indeed, the sciences cannot claim success in their enterprise, as long as philosophy does not claim its own success. So long as consciousness, knowledge, universals, and similar concepts and problems of philosophy are not fully understood and solved, anything the special sciences say ignores such underlying obscurities and uncertainties. This means that the apparent success of science is temporary and delimited. Success can only be claimed at infinity, when all branches of knowledge reach their respective goals.

12. Approaching Reality

What do we mean by a thesis "*approaching reality*"? We refer to the *disjunction* of all conceivable (now or ever, i.e. to date or in the future) solutions to a problem. At every *elimination* of one of these alternative solutions, all

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[4] As I have pointed out elsewhere, such doctrines are unfair to innocent victims, accusing them without justification of past crimes; and they whitewash criminals, making it seem like they merely implement justice!

other alternatives are brought closer to being "the" solution. It is a bit like a game of musical chairs, where the last, leftover contestant will be declared the winner. As the list of possibilities is shortened, the status of each possible solution is increased. Thus, it is not only through confirmation (of a given thesis), but also through rejection (of alternative theses), that the given thesis advances in our esteem, or in its "degree of truth". In this way, we do not have to claim every thesis true or false without making nuances, and can view the quantitative aspect of induction as having formal justification.

13. Experiment

Experiment is a category of observation. It is observation in the midst of active interventions, in contrast to totally passive observation. Even when an observer moves around an object to see it from other angles, without interfering with the object, that is experiment of sorts. Asking people questions on some topic is also experiment of sorts.

Of course, when we think of experiment, we especially think of manipulations of some object – i.e. changing some conditions in or around it, and observing how its properties or behaviors are affected. Scientific experiment may be viewed as a way to speed up observation – making the object go through different phases of its nature, rather than waiting for it to vary by happenstance. Experiment improves on mere observation simply because it expands its scope. Experiment is not some new discovery by modern science[5] but has always existed – since the first man prodded some beast with his finger to see how it would react!

To conclude, the distinction of experimentation is not manipulation of the object, but action by the observer. The essence of experimental research is still observation. It is active, instead of passive, observation. Experiment is not some epistemological category apart from and superior to observation.

Indeed, one might well ask if any observation is passive. But the answer to that is necessarily yes. At the end of any experimental activity, there has to be a moment of passive observation. Rather, then, one might say that the essence of observation is passive – patient looking and seeing, receptivity and attention.

Experiment can of course go wrong for a variety of reasons; its results are not always credible. It may be designed on the basis of wrong theoretical or practical assumptions; the physical equipment intended to control or measure the phenomena studied may be badly constructed or set up; the researchers may be insufficiently careful and accurate in their handlings and readings, whether inadvertently or 'accidentally / on purpose'; the researchers may erroneously record their correct findings; and the results may be misinterpreted, due to weak logic or lack of intelligence or narrow knowledge base, or simply due to conscious or unconscious bias.

Often, experimenters are simply unable to see things differently from the schemas they are used to, and have foregone conclusions in their minds no matter what the experiments they make imply. Sometimes, however, experimental results seem contrary to all expectation and the incredulity of researchers is eventually legitimated by review of all procedures and further experiment. If an experiment gives *inexplicable results* in the light of all current knowledge and theory, one should indeed review and redo it very carefully.

Thus, theory and experiment have a dynamic, two-way relation. Experiments are meant to confirm or refute theories, by testing their predictions. But also, theories are used to design and evaluate experiments, as well as to explain their results. The two must repeatedly be adapted to each other.

14. The Uncertainty Principle

The Uncertainty Principle of quantum physics, according to which we cannot precisely measure both the position and the momentum of a particle at a given time, may be interpreted either epistemologically (i.e. as an insurmountable practical difficulty of observation and calculation) or ontologically (i.e. as something out there, a

[5] Although, of course, modern science has been using experiment more consciously, systematically and successfully than ever before.

truth about the particle itself, such that it does not *have* precise position and momentum). Taken in this neutral manner, it is assumably generally accepted as scientific fact; it is the interpretations of it that are debated.

Classical physics would opt for the epistemological view. This would say that at the phenomenal levels under consideration, any measuring instrument or technique physically affects the objects to be measured, and therefore cannot provide an accurate result – but *we can still hypothesize that* there is an underlying reality, i.e. that the particle does indeed have both position and momentum. Note well that this posture is logically compatible with the notion that the assumed "underlying reality" will never be specifically known, i.e. there is no intent to evade the discovery that it is technically unknowable.

Modern positivism would prefer the ontological interpretation. It would say: no, the immeasurability is not an illusion underlain by definite facts – *we can hypothesize that* the indeterminacy is itself the ultimate reality, the truth of the matter. Note well that this posture is just as hypothetical as the preceding; it cannot claim to know what the "ultimate reality" is anymore than the other view, since the common premise is precisely that the reality is technically inaccessible to humans. It is thus just as much a doctrinal stance, however prestigious those who take it are.

Granting the said impossibility of full measurement, it follows that – in this instance at least – each of the two interpretative theses is neither verifiable nor falsifiable. In this context, at least, their logical status is the same – they are equally speculative.

Both postures are admittedly hypothetical, but the former is clearly simpler, the latter philosophically more problematic. One of the principles of scientific method, in any context, is to prefer the simpler thesis unless we have good reasons to seek out a more complex one. That is, the simpler view is considered inductively more likely, because it is less prone to affect previously established knowledge.

We are not forced to rest content with the classical view; but we must have *sufficient motive* to abandon it in favor of the more complicated positivist view. The latter involves some very revolutionary suppositions about the nature of matter (namely, the possibility of natural spontaneity), which we cannot favor just for the hell of it, merely for the pleasure of challenging the existing order of things. We must first show up some distinctive weakness in the older view or some novel strength in the newer view, to justify such a radical overhaul of all past acquisitions and explanations.

The positivists argue that since we cannot determine these facts precisely, we might as well – for all practical purposes – regard them as non-existent. But the result is not quite the same, because we should consider not only the consequences of such a posture on their particular field of study, but with regard to knowledge as a whole. That is, it is not an innocuous stance – it has wide-ranging ontological and epistemological significance, seemingly putting some important fundamental assumptions of reason (viz. that all natural events are caused) in doubt.

Furthermore, there is no justification in forbidding further discussion of the issue henceforth. The positivists make an argument by intimidation, saying effectively "those who disagree with us are not worthy of intellectual consideration"[6]. But surely, the positivists must still remain open-minded – for they may indeed one day be *proved* wrong, if it should happen that we are able to dig deeper into matter, and eventually find some way to experimentally measure what the uncertainty principle says we cannot.

We cannot empirically prove a "cannot" – a "cannot" is *a generalization* from experience (though, in some cases, it is a logical insight, as in the preceding sentence). The uncertainty principle is not a purely empirical fact, plucked out directly from experience; it emerges within a certain theoretical context, which shapes our interpretation of events. This context, like many others throughout the history of science, may yet change, as our knowledge grows. There is no final and incontrovertible scientific theory.

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[6] This is also an argument by authority. To which one can answer: one may be a great physicist and a not-so-great philosopher; merit in one field does not guarantee success in all others. Such attitudes are reminiscent of religious authoritarianism.

Note well that I am not personally defending one or the other posture here[7], but comparing them from a neutral perspective, giving both fair consideration. That is, I am evaluating *their discourse* as a logician, using a discourse that is pure logic.

15. Epistemic Ethics

Logic is not only about forms of reasoning, but also about intellectual style. It is first and foremost a teaching of epistemic ethics: the attitudes the intellect must adopt to arrive at truth. These include suppression of one's ego, open-mindedness and truth-orientation, among many others.

Genuine philosophers earnestly search for truth. They have sincere questions and try to answer them honestly. They admit areas of doubt or ignorance. They are open to change, and evolve over time.

Fake philosophers play the role of being philosophers, but are really not philosophers. They have little interest in the substance of issues, but seek to dazzle an audience with their superficial erudition and their style. They sow famous names around in the hope of reaping reflected glory. They follow intellectual fashions in pursuit of wide approval ratings, being pious or subversive as befits the current market of ideas. To gain attention and fame, they may be scrupulously conventional or say shocking things.

They say things they do not personally fully understand; they claim to have knowledge they in fact lack. They are apologists for received doctrines, rather than researchers; and when they seem to propose some new doctrine, it is only by arbitrary opposition to established ideas so as to appear original.

For many people, philosophy is an instrument of social climbing or power over others, rather than a search for truth. Such people may convince many others of this or that absurd or silly doctrine, using the prestige of their position in the education system or in the media, or in some other social role. But in fact, they have only muddled their victims' minds and incapacitated them.

When philosophizing, it is wise to remain low-key and matter-of-fact, avoiding grandstanding and personal emotional outbursts as much as possible. This is an issue of style, not substance. But if one does not exercise sufficient restraint in such discourse, it is very easy to get lost in misleading hyperboles. The wrong choice of language can end up determining our doctrines, causing us to approximate and exaggerate.

Here, I have in mind the likes of Nietzsche or Kierkegaard (and many others), who *pervasively* intertwine their emotional responses with their philosophical realizations. They make a big thing of their personal reactions – writing in a narcissistic manner. Thus, in the face of his insight that man is alone in the universe, without apparent supports – Nietzsche indulges in theatrical outbursts, dramatizing his utter shock, role-playing a heroic response. This is all bombast, designed to give his ego a sense of self-importance; it is a kind of mental equivalent of masturbation. Kierkegaard – "same-same, but different": an equally emotional approach, though a self-pitying one and one with more sincerity.

Such personal reactions were, of course, characteristic of the times and places those philosophers lived in. Their styles seem so "un-modern" – few would indulge in such tonalities today. We are perhaps less flamboyant – but also more careful to avoid confusion between judgments of fact (true–false) and judgments of value (good–bad). Philosophers are human, and may of course be passionate to some extent, and express their personal valuations; but this should not be the centerpiece of their discourse.

16. Phenomenology

'Phenomenology' refers to the consideration of experience, in its largest sense, before distinctions are made between 'real' experiences and 'illusory' ones. The term was coined by Johann Heinrich Lambert (German, 1728-1777) in his *New Organon* (1764), with this application in mind.

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[7] My neutrality should be evident from the open-minded position I have taken with respect to the idea of natural spontaneity in *The Logic of Causation* (see for example chapter 10.1 there).

The title of the 1807 work of Georg W. F. Hegel (German, 1770-1831), *Phenomenology of the Spirit*, would be a misnomer, if we regarded the term as limited to sensory experiences and their mental equivalents, to the exclusion of intuitions. For the spirit (or self or soul) has no perceptible phenomenal qualities, but is self-intuited.

Although the term 'phenomenon' nowadays is usually taken (and I so take it) to refer to experiences with features like sights, sounds, etc., whether sensed or fancied, its original meaning in Greek and then Latin is 'appearance', a broader term in which we may well include intuited experiences (as Hegel did, and I do too).

Thus, 'phenomenology' should be understood to refer to the study of appearances, and not only phenomenal appearances.

Phenomenology is a branch of philosophy designed to overcome the problem posed by 'naïve realism'. The existence of this problem does not mean that there is no solution to it. Phenomenology neutralizes the issue, showing that all realism is not necessarily naïve, and allowing for philosophical theories favoring realism that are more subtle and capable of truth.

Concerning my barely mentioning Edmund Husserl (German, 1859-1938) in my work *Phenomenology*, I have this to say. I simply had no pretension of being a historian. My silence was certainly not intended to ignore or belittle this philosopher's great work, whose scope, depth, intelligence and intellectual maturity are evident. I acknowledge strong influence from it (ideational and terminological). But I also have other influences (such as Indian philosophy), and my own contributions to make.

My intent in the said work was to summarize briefly, in a minimally intellectual manner accessible to the maximum number of people, the value and necessity of a phenomenological approach to knowledge, so as to underscore and bypass the common affliction of naïve realism. Husserl's discourse, to my mind, perhaps because of its roots in German Idealism and its academic style, gives the impression that the phenomenal is a conceptual construct rather that a raw experience. I tried to avoid such misleading impression, and to give readers a practical tool.

As for use of the term 'phenomenology' – it cannot be reserved to Husserl's work, but may legitimately be applied to any study of the phenomenal *per se* (i.e. quite apart from its status as reality or illusion, i.e. before such ontological and epistemological status is debated and determined).

Aristotle spoke of a science of being *qua* being, which he called 'first philosophy', and his successors labeled 'metaphysics' (because of the editorial position of this book after that on physics), and which became known as 'ontology'. The idea and name of such a study has remained of universal value, even though there have been over time many views as to its possibility, scope and content.

In time, Western philosophy realized the methodological difficulties of this proposed discipline. In particular, it was not easy to disentangle it from the theory of knowledge, or 'epistemology' and logic. Conflicting schools kept arising; in each generation, in one guise or another, they competed: Idealists vs. Materialists, or Empiricists vs. Rationalist, and so forth.

The idea of a more fundamental field of research – viz. phenomenology – gradually arose in response to the realization of the underlying cause of the difficulties. In order to reconcile traditional philosophical tendencies, all of which evidently contained some truth, philosophy needed to reconsider the issues with renewed innocence, more clearly distinguishing between raw given data and processed information.

This new 'first philosophy', or science of appearance *qua* appearance (as we may also call it, imitating Aristotle), cannot be regarded as necessarily and forevermore frozen with the form and content Husserl first gave it. The term 'phenomenology' belongs to all philosophers, as an open and neutral term like the terms 'philosophy', 'epistemology', 'ontology', or 'logic'. It is no longer the name of a school of thought (like Phenomenalism), but of a branch of philosophy.

17. Appearance, Reality and Illusion

Phenomenology results from a realization that the building blocks of knowledge are appearances. This realization is obtained through a dialectic, comprising thesis, antithesis and synthesis, as follows.

(a) At first, one naturally regards everything one comes across in experience or thought as '**real**' (this is the 'naïve realist' stance).

(b) Then, faced with evident contradictions and gaps in one's knowledge, one logically realizes that some things that seemed real at first must or at least may eventually be considered unreal – i.e. '**illusory**' (this constitutes a cognitive crisis).
(c) Finally, one realizes that, whether something is real or illusory (and ultimately remains so or turns out to be the opposite), at least it can immediately (unconditionally and absolutely) be acknowledged as '**apparent**' (this is the 'phenomenological' stance, which resolves the crisis).

Knowledge of reality can then be inductively built up from knowledge of appearances, thanks to the following principle (d): ***One may credibly assume something that appears to be real is indeed real, until and unless it is proved illusory or at least put in doubt for some specific reason*.** This may be characterized 'subtle realism', and proceeds from the realization that the mere fact of appearance is the source of all credibility.

Thus, phenomenology follows the natural flow of knowledge, which is to initially accept individual appearances as real, while remaining ready to reclassify them as illusory if they give rise to specific logical problems that can only be solved in that specific way. The concept of 'appearance' is therefore not strictly primary, but a transitional term for use in problematic cases. Since it refers to the common ground between 'reality' and 'illusion', it is deductively primary. But since the latter are in practice attained before it, it is inductively secondary.

The concepts appearance, reality and illusion are to begin with concerned with experiences; and only thereafter, by analogy, they are applied to abstractions, i.e. conceptual products of experience arrived at through rational considerations, such as comparison and contrast (i.e. affirmation or negation, and measurement).

The term 'fact' is usually intended to refer to purely experiential data, i.e. the raw material of knowledge, in which case the opposite term 'fiction' refers to other items of knowledge, i.e. those tainted by interpretative hypotheses. (But note that in practice of course we do not always abide by such strict definitions, and may use the terms more broadly or narrowly.)

The concepts of truth, falsehood and uncertainty correspond in scope to those of reality, illusion and appearance. The latter triad is applied to the contents of propositions, while the former concerns the propositions as such. For example, considering "dogs bark", the fact of dogs barking is 'a reality', while the proposition that dogs bark is 'true'; similarly in other cases.

Once we understand all such concepts as signifying different epistemological and ontological *statuses*, it becomes clear why they need to be distinguished from each other. They are all used as logical instruments – to clarify and order discourse, and avoid confusions and antinomies.

Note well that phenomenology is not a skeptical philosophy that denies reality to all appearances and claims them all to be illusions. Such a posture (which too many philosophers have stupidly fallen into) is logically self-contradictory, since it claims itself true while rejecting all possibility of truth. The concept of illusion has no meaning if that of reality is denied; some credulity is needed for incredulity. Doubt is always based on some apparent contradiction or gap in knowledge; i.e. it is itself also an item within knowledge.

18. Existence and Non-existence

What is the relation between the concepts of existence and non-existence (or being and non-being), and those just elucidated of appearance, reality and illusion, one might ask?

At first, the term existence may be compared to that of reality, or more broadly to that of appearance (to admit the fact that illusions occur, even if their status is not equal to that of realities). However, upon reflection, an important divergence occurs when factors like time and place are taken into consideration.

We need to be able to verbally express changes in experience over time, space and other circumstances. An appearance, be it real or illusory, 'exists' at the time and place of its appearance – but may 'not exist' at some earlier or later time, or in another place. The 'existence' of appearances is transient, local, conditional and relative. What appears today may cease to appear tomorrow, although it might (or might not) continue to appear less manifestly, through someone's memory of it or through the appearance of exclusive effects of it. Something may appear here within my field of vision, but be absent elsewhere. You may see this in some circumstances, and then notice its absence in others.

We thus need to distinguish different ways of appearance. With reference to time: in actuality, or through memory or anticipation; or with reference to spatial positioning. Or again, with regard to modality: in actuality, only through potentiality (i.e. in some circumstances other than those currently operative), or through necessity (i.e. in all circumstances).

Time and place also incite a distinction between 'existence' and 'reality' (or 'truth'), in that when something ceases to exist at a given time and place, the reality of its having existed at the previous time and place is not affected.

Furthermore, appearances are apparent to someone, somewhere – they are contents of consciousness, objects of cognition. The concept of existence is differentiated also with reference to this, by conceiving that what may be apparent to one Subject, may not be so to another. Moreover, we wish to eventually acknowledge that something may conceivably exist even without being experienced by anyone (though of course, in defining such a category, we must admit for consistency's sake that we are thereby at least vaguely and indirectly conceptually cognizing the object concerned).

We thus come to the realization that *the concept of appearance is a relatively subjective one, involving two distinct factors: an object of some kind with specific manifestations, on the one hand, and an awareness by someone of that object at a given time and place*. The concept of existence is intended to separate out the objective factor from the factor of consciousness implicit in the concept of appearance.

'Existence' is thus needed to objectify 'appearance', and allow us to conceive of the object apart from any subject's consciousness of it. We need to be able to conceive of the objects appearing to us as sometimes 'continuing on' even when we cease to be aware of them. Furthermore, we need to be able to consider objects that we have not yet personally experienced, and even may never experience. In this manner, we can project our minds beyond mere appearance, and through conception and adduction hope to grasp existence in a larger sense.

The concept of existence and its negation are thus additional instruments of logic, facilitating rational discourse, without which we would not be able to mentally express many distinctions. Consequently, saying 'existence exists' and 'non-existence does not exist' is not mere tautology, but an acknowledgement that the words we use have certain useful intentions. These statements constitute one more way for us to express the laws of thought. Existence cannot be denied and non-existence cannot be affirmed.

We do not make the distinction between 'existents' and non-existents' by mentally lining up two kinds of things, like apples and things other than apples. The epistemological scenario applicable to most of our concepts is not applicable to such basic ones, which are of a more broadly pragmatic nature. Discernment rather than distinction is involved.

Whereas the concept 'existence' has some ultimate experiential content, 'non-existence' has none – because factual denial is not based on the same mental process as affirmation. We never experience non-existence – we only (in certain cases) *fail to* experience existence. The concept of existence is not built up by contrast to that of non-existence, since (by definition) the former relates to 'all things' and the latter to 'nothing', and nothing is not some kind of something. There is no time, place or circumstance containing nothingness. The word 'non-existence' is just a dumping place for all the words and sentences that have been identified as meaningless or false.

Terms like 'existence' and 'non-existence' are not ordinary subjects, copulae or predicates; they are too broad and basic to be treated like any other terms. Those who construct a theory of knowledge, or an ontology, which concludes that 'existence does not exist' or that 'non-existence exists' have not understood the logic of adduction. When there is a conflict between theory and observed facts, it is the theory (or the 'reasoning' that led up to it) that is put in doubt and is to be dismissed, not the facts.

19. Philosophy and Religion

It is important to distinguish between religion (including philosophical discourse based on a particular religion, for apologetic or polemical purposes) and philosophy proper (which makes no direct appeal to premises from a religious tradition, though it may discuss religious issues).

This is a derivative of the distinction between faith and reason, keeping in mind that faith may be reasonable (i.e. without conclusive proof or disproof) or unreasonable (i.e. in spite of conclusive disproof). Note that reasonable faith is necessarily before the fact – for, if some fact is already indubitably established, there is no need of faith in it. Unreasonable faith is contrary to fact.

> Some philosophers regard faith in pure speculations, those that are in principle neither prov*able* nor disprov*able* (e.g. faith in the existence of God or in strict karma), as unreasonable. But I would class the latter as within reason, for it is always – however remotely – conceivable that some proof or disproof might eventually be found, i.e. the 'principle' is itself is hard to establish with finality. Moreover, the category of pure speculation is even applicable to some scientific theories (for example, Bohr's interpretation of quantum uncertainty as indeterminacy).

Religion is based on faith, i.e. on the acceptance of theses with insufficient inductive and deductive reasons, or without any reason, or even against reason (i.e. albeit serious divergence from scientific conclusions based on common experience and logic) – on the basis of statements by some assumed spiritual authority, or even merely because one feels so emotionally inclined.

Philosophy, on the other hand, is based on personal understanding, on purely empirical and logical considerations; although some or many of its theses might well to some extent be hypothetical, or even speculative, they remain circumscribed by scientific attitudes and theories – that is, a sincere effort is made to integrate them with the whole body of experience and reason.

The difference between religion and philosophy is not always clear-cut, note well. Religion is not throughout contrary to reason, and philosophy is not always free of mere speculation. The difference is whether the credulity, or *degree of belief*, in speculative propositions is proportional or not to the extent of available adductive evidence and proof. In the case of mere faith, the reliance on a given proposition is disproportionate to its scientific weight; whereas in the case of rational conviction, there is an effort to keep in mind the scientific weight of what is hypothesized - one is ready to admit that "maybe" things are not as one thinks.

> The two also differ in content or purpose. Religions are attempts to confront the problems of human finitude and suffering, through essentially *supernatural* explanations and solutions. The aim of religion is a grand one, that of individual and collective redemption. Philosophies resort to *natural* explanations and expedients, attempting to understand how human knowledge is obtained and to be validated, and thus (together with the special sciences) gradually identify ways and means for human improvement. There is still an underlying valuation involved in the philosophical pursuit, note well; but the aim is more modest.

To make such a distinction does not (and should not) indicate an antireligious bias. It is not intended as a 'secularist' ideology, but merely as a secular one. Religion (or at least those parts of particular religions that are not decisively anti-empirical or anti-rational) remains a legitimate and respectable human activity – it is just recognized as being a different intellectual domain, something to be distinguished from philosophy so as to maintain a balanced perspective in one's knowledge.

The reason this division was produced historically by philosophers was to protect philosophy (and more broadly, the special sciences) from being reduced to a supporting role, as the "handmaiden" of religion. It was necessary to make philosophy independent of religion to enable philosophers to engage in critical judgment, if need arose, without having to force themselves to be "religiously correct" or risk the ire of politically powerful religious authorities.

The secularization of philosophy was precisely this: a revolt against foregone conclusions imposed by religious authorities (i.e. people collectively self-proclaimed as sole torch-bearers of truth) as undeniable 'fact'. It is important to understand *the logical rationale* behind such a revolt, i.e. why it is epistemologically valid and necessary.

Anyone can stand up and claim to have been graced by some Divine revelation/salvation (or holy spirit) or to have attained some Buddhist or Hindu enlightenment/liberation.

Many people throughout history have made such metaphysical claims. Some have gone so far as to claim to be a god or even G-d. Some have not made explicit claims for themselves, but have had such claims made on their behalf by others. Some of the claimants – notably, Moses, Jesus, Mohammed, and Buddha – have founded world-class religions, that have greatly affected the lives of millions of people and changed the course of history. Other claimants – like your local shaman, Egypt's Pharaoh, or Reverend Moon – have been less influential.

The common denominator of all these claims is some extraordinary mystical experience, such as a prophetic vision or a breakthrough to 'nirvana' or 'moksha' (enlightenment/liberation). The one making a claim (or claimed for by others) has a special experience not readily available to common mortals, on the basis of which he (or she) becomes a religious authority, whose allegations as to what is true or untrue are to be accepted on faith by people who have not personally had any commensurable experience.

The founding impetus is always some esoteric experience, on the basis of which exoteric philosophy and science are shunted aside somewhat, if not thoroughly overturned. The founding master's mantle of authority is thereafter transmitted on to disciples who do not necessarily claim an equal status for themselves, but who are pledged to loyally study and teach the founder's original discoveries.

Religion is essentially elitist, even in cases where its core experience (of revelation or enlightenment) is considered as in principle ultimately open to all, if only because of the extreme difficulty of reaching this experience.

In some cases, the disciples can hope to duplicate the master's achievement given sufficient effort and perseverance. In other cases, the master's disciples cannot hope to ever reach their teacher's level. But in either case, they are the guardians of the faith concerned, and thence (to varying degrees) acquire institutional 'authority' on this basis, over and above the remaining faithful.

Thus, we have essentially two categories of people, in this context.

a) Those who have had (or claim to) the religious experience concerned *first-hand*.
b) Those who, *second-hand*, rely on the claim of the preceding on the basis of faith, whether they have institutional status of authorities or not.

Now, this distinction is not intended to be a put-down, a devaluation of either category of person. But it is a necessary distinction, if we are to understand the difference in epistemological perspective in each case.

From the point of view of a first-hand recipient, i.e. someone who has personally had the mystical experience concerned, his discourse is (for his own consumption, at least) pure philosophy, not religion. He is presumably not required to have faith, but all the information and reasoning involved is presented to him on platter. His task is simple enough; his responsibility is nil, his certainty total.

But a second-hand recipient has a difficult task, epistemologically. He has to decide for himself whether the first-hand teacher is making a true or false claim. He has to decide whether to have faith in him or not. He is required to accept an *ad hominem* argument.

This objection is not a judgment as to the master's veracity. Some alleged masters are surely charlatans, who lie to others so as to rule and/or exploit them; some of these remain cynically conscious of their own dishonesty, while some kid themselves as well as others. But it may well be that some alleged masters are not only sincere, but have indeed had the experience claimed and have correctly interpreted it.

But who can tell? Certainly not the ordinary Joe, who (by definition) has never had the experience concerned, and in most cases can never hope to duplicate it – and so is not qualified to judge. Yet, he is called upon to take it on faith – sometimes under the threat of eternal damnation or continuing samsara if he does not comply.

How is the common man to know for sure whether some person (contemporary – or more probably in a distant past, who may even be a mere legend) has or has not had a certain mystical experience? It is an impossible task, since such experience is intrinsically *private*!

To date, we have no scientific means to penetrate other people's consciousness. And even if we could, we would still need to evaluate the significance of the experience concerned. Such judgments could never be absolute and devoid of doubt, but necessarily inductive and open to debate. Thus, the 'certainty' required by faith could not be rationally constructed.

It is no use appealing to witnesses. Sometimes two or more people confirm each other's claim or some third party's. Moreover, often, alleged authorities disagree, and reject others' claims. But who will confirm for us innocent bystanders that any of these people are qualified to authenticate or disqualify anyone?

Thus, faith is a leap into the unknown. However, it is often a necessary leap, for philosophy and science are not able to answer all questions (notably, moral questions) convincingly, and we in some cases all need to make decisions urgently. So, religion has to be recognized by philosophy as a legitimate, albeit very private, choice. In this context, note well, secularism is also a religion – an act of faith that there is no truth in any (other) religious faith.

> Note: Buddhism is today often painted as "a philosophy rather than a religion", implying that it does not rely on faith. But this is a patently unfair description: there are plenty of faith loci within Buddhism. Belief in the wheel of reincarnation (samsara), belief in the possibility of leaving it (nirvana), belief that at least one man attained this Buddha state (Siddhartha Gautama), belief in the specific means he proposed (moral and meditative disciplines, notably non-attachment), belief in a multitude of related stories and texts – all these are acts of faith.
>
> These beliefs require just as much faith as belief in the existence of God, and other more specific beliefs (starting with belief in the Torah, or Christian New Testament, or Koran), within the monotheistic religions. The adherent to Buddhism must take on faith the validity of his spiritual goal and pathway, *before* he becomes a Buddha (assuming he ever does). The end and means are not something philosophically evident, *till* he reaches the end through the means. This is the same situation as in the monotheistic religions.
>
> So, Buddhism is not primarily a philosophy, but a religion – and to say otherwise is misleading advertising. The same is true of Hinduism, which shares many doctrines with Buddhism (as well as having some monotheistic tendencies, although these are not exclusive).

It is important to remain both: open-minded, granting some of the claims of religions as conceivable; and cool-headed, keeping in mind some of them are unproved. Intolerance of religion is not a proper philosophical stance, but a prejudice, a dogma. The true philosopher, however, remains sober, and does not allow himself to get carried away by emotional preferences.

Transcendental claims can, nevertheless, be judged and classed to some extent. Sorting them out is, we might say, the realm of theology (a branch of philosophy).

Some claims are, as already pointed out, directly contrary to experience and/or reason; if some harmonization cannot be construed, philosophy must exclude such claims. Some are logically conceivable, but remotely so; these are to be kept on the back burner. And lastly, some are very possible in our present context of knowledge; these can be used as inspirations and motivations for secular research.

Generally speaking, it is easier to eliminate false claims than to definitely prove true claims.

Each specific claim should be considered and evaluated separately. It is not logical to reject a doctrine wholesale, having found fault with only some aspects of it (unless these be essentials, without which nothing else stands). In such research, it is well to keep in mind the difference between a *non sequitur* and a disproof: disproving premises does not necessarily mean their conclusions are false, for they might be deducible from other premises.

In choosing among religions, we usually refer to the moral recommendations *and behavior patterns* of their founder and disciples (as well as more sociologically, of course, to traditions handed down in our own family or society) as indices. If the advice given is practiced by those preaching, that is already a plus. If the advice and practice are wise, pure, virtuous, kindly, and loving, etc. – we instinctively have more confidence. Otherwise, if we spot hypocrisy or destructiveness, we are repelled. (Of course, all such evidence is inconclusive: it suggests, but does not prove.)

But, however persuaded we personally might be by a religious teaching, its discourse cannot be dogmatically taken as the starting premise of philosophy. *To a first-hand mystic, it may well be; but to the rest of us, it cannot be.* Philosophy is another mode of human inquiry, with other goals and means. Spirituality and rationality are neither necessarily bound together, nor necessarily mutually exclusive. They might be mixed somewhat, but never totally confused.

Thus, if someone claims some mystical experience, or refers to authoritative texts based on some such foundation, his philosophizing might well be considered attentively and learned from to some degree, but it is ultimately irrelevant to pure philosophy; or more precisely such discourse can become in part or wholly relevant only provided or to the extent that it submits to the secular standards of public philosophy.

The latter can only refer to experiences and insights that can readily be duplicated, i.e. that are within everyone's reach (except a minority with damaged organs), if they but consider certain empirical data and follow a set of inductive and deductive arguments. It aims at developing, using ordinary language, a potentially universal worldview and understanding.

Admittedly, as some would argue, high-level philosophy (as with advanced mathematics or physics) is in practice not comprehensible to most laymen! Just as meditation or other religious techniques are not easily mastered, it

takes a lot of effort and intelligence to learn and apply logic in depth. Moreover, the novice who enters the path of philosophy is as hopeful (full of faith in eventual results) as the religious initiate; and all along both disciplines, small successes encourage him to keep going.

So, one might well ask the embarrassing question: what is the difference between the elitism of philosophy and that of religion? Ultimately, perhaps none, or just a difference of degree! This answer would be true at least of reasonable religion. But in the case of unreasonable religion, we ought not allow ourselves to believe in it – even as a remote possibility – until if ever it becomes manifestly reasonable, i.e. until and unless our basic view of reality is indeed overturned by actual personal experiences.

It is unwise to excessively compartmentalize one's mind and life; at the extreme, one may risk some sort of schizophrenia. One should rather always try to keep one's rationality and spirituality largely harmonious. Faith in religious ideas need not be an 'all or nothing' proposition; one can pick and choose under the guidance of reason. Reason is not in principle opposed to faith; it allows for its essentials.

The challenge for today's philosophers of religion, who wish to bring God and/or other religious ideas back into the modern mind, is to fully acknowledge and accept the current conclusions of modern science. It is no use trying to tell an educated contemporary that scientific claims – regarding the age and size of the universe, the evolution of matter, the age and history of our planet, the evolution of vegetable and animal life on it, the emergence of the human species – are all wrong! Such discourse is irrelevant to the modern mind, if not absurd.

There is still room, side by side with the worldview of science, for religious ideas – but these must inductively adapt to survive. This is always possible by exploiting (within reason) loopholes in the current scientific narrative, whatever it happen to be at any given time. Instead of emphasizing conflicts, thinkers should seek out the conceptual possibilities for harmonization. Real scientists remain open-minded wherever there are lacunae.

> Creationism need not be a fixed dogma. Rather than insist that the world was created in 6 days some 6'000 years ago, say that God is the creator of the initial matter-energy of the universe, and of the laws of nature and evolution inherent in it, and that He triggered the 'big bang' 13.7 billion years ago.
>
> Moreover, in physics, suggest that the indeterminacy apparent in quantum mechanics is perhaps really the opportunity God uses to daily impinge on details of the world process. Or again, in biology, propose the first conversions of mineral into living and then animate matter (wherever and whenever they occurred) were maybe due to God's intervention; and rather than combat Darwinism, accept it as part of God's plan and hypothesize that the apparently spontaneous occasional mutations of genes might well be miracles.

3. About Words

1. Meaning

Words are gestures, sounds or drawings[1] (whether physical or mental) that *mean something to someone*. But what they mean is not necessarily real, but may be imaginary. The *meaning* (or signification or reference or "sense") of a word is the direction it points our attention in (its "intention"). It is something wordless beyond the word, which we have to apprehend and comprehend to grasp the word.

Words are utilitarian symbols, whose function is to arouse some perception or conceptual thought, some memory or imagination, selected by their speaker, in their auditor (or by gesticulator for spectator, or by writer for reader). The same word may signify different things to different people, though good communication depends on there being some harmonization of meaning between them; otherwise, there will inevitably be misunderstandings between them.

Many words do have a reasonably 'objective' meaning, one that appears the same to many observers; in this sense, they are absolute. For example, "she has green eyes" is hardly debatable. But some words are wholly or partly about 'subjective' events, so that their meaning is *relative* to some conscious Subject's viewpoint. The relativity involved is usually due to the beholder engaging in some valuation. For examples, the predicates in "she's so exotic" or "she's beautiful" tell us as much about the speaker as about the person discussed (i.e. "she"). Such words can be made more public, simply by increasing verbal precision; e.g. "she is beautiful to him".

Although generally a word ultimately refers to some experience(s), its meaning varies considerably from person to person or in the same person across time. E.g. if one has never seen an elephant in the flesh, but only a picture of one, the word 'elephant' means somewhat less to one than it does to an elephant trainer.

Indeed, there are things we know very little of – *not much more than their name*, and perhaps a rough description of the experiences or thoughts of other people that gave rise to this name (for examples, the meaning of 'enlightenment' to an unenlightened person, or of 'black hole' to a non-physicist).

Thus, the experiential basis for a word varies greatly, ranging from direct personal experience to indirect second-hand experience, based on hearsay evidence, verbal descriptions, various illustrations and recordings. Use of a word does not signify full knowledge of its potential meaning.

> Note well that reference, here, does not imply a 'correspondence' theory of meaning, such as that proposed by naïve realism. It is rather based on the idea of words acquiring meaning by intention - intention being a volitional act or velleity of the cognizing Subject, attaching this word to that *appearance*. The appearance may be experienced or conceived, real or illusory. In sum, reference is justified by a phenomenological approach.

Words are first produced by designation, i.e. pointing and naming – this is suggested in colloquial language by the expression "show and tell".

Physical **pointing** is usually performed by extending the index finger in some direction, in some cases touching the object concerned; or one can more precisely delineate the object's boundaries, at a distance or right up close. At a later stage in the development of knowledge, something akin to indication is often performed verbally; we may do so by using words like "this" or "that", or by describing how to get to an object or what the object looks like.

It should be stressed that indication cannot function if it is merely positive, just pointing and saying "this" – except when we intend to refer to the whole of our present experience (the here and now). Normally, indication

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[1] 'Gestures' refers to sign language. Sounds to the spoken word. Drawings (doodles, scribbles) to the written word, be it in pictorial form or in purely symbolic script.

has a usually tacit negative component, which excludes some of the present experience, leaving only the part of it we wish to refer to. We may say "*this – but not that*".

The negative clause is as important as the positive one, in directing our mind to the precise object intended. We cannot really understand pointing, if we do not realize the limits of its applicability, i.e. what we intend to exclude from consideration. "This" by itself may include too much. We need the negative thought "but not that" to delimit it.

It is important to realize that, whereas the positive aspect of indication is a purely empirical act, the implicit negation is in part a *rational* act. "This" only requires a look, whereas "but not that" requires a mental 'crossing off' of some items seen, i.e. an *imagination* of the part of the world covered by "this" existing *without* (in abstraction from) the part of the world covered by "that".

It is perhaps for this reason that babies (to about nine months) and most (or all) animals seem unable to comprehend the pointed finger: it does not merely point towards something, but also away from other things. There was no doubt a long evolutionary history, before the human species could grasp it.

Another marvel occurred when our ancestors managed to associate a word of some sort with the object pointed to. This is the act of **naming** or verbalizing (putting into words). A name is conventional insofar as the word is arbitrarily chosen; but the thing intended by it – whether real or imaginary, objective or subjective – is not invented.

Once some indicative words have been coined, knowledge often progresses by analogy; rather than the use of similes, this consists of creative assimilation by means of *metaphor*. For example, the mental domain is empirical with regard at least to mental sights and sounds, which are similar to physical sights and sounds. Once this domain is established, it is permissible to assume "mental emotions" by analogy to those felt in the body. However, here the analogy is metaphoric, rather than based on simile, since mental emotions are not so concretely evident.

Some words we use have been consciously invented by an individual to put a handle on certain newly discovered things; others (the large majority of them, probably) arose more unconsciously in the course of history, through the give and take of two or more people trying to exchange information and instructions.

The property used in the **definition** is not all that the word refers to. A word is defined by some supposedly *constant and distinctive* property (or set of properties) of the object(s) it refers to, precisely because we are thus (if we supposed rightly) sure to always and in all cases find this property in the object(s) concerned and in no others. There may be and usually are many other properties equally eligible for the role of defining property. Moreover, we do not intend by our act of definition to ignore or exclude the less permanent and widespread properties of the objects concerned.

The definition of a word is not something essentially verbal – it is not other words. The verbal definition only serves to draw our mind in the direction of the intended property; the words used are mere means to this end. If definition were only verbal, knowledge would consist of a suspended cloud of ultimately meaningless movements, grunts and shapes.

Use of words is not evidence of understanding. A proof of this is the experience we sometimes have of reading a sentence again and again (saying the words in our head) without having an inkling of what they are saying (due to our inattention – our failure to focus on their meaning, in addition to their shapes and sounds). Philosophers who equate thought with verbal thought fail to take such evidence into consideration.

It is important to realize that definitions *may change over time*, in scope or altogether. If a term is *predefined* by some experienced or inferred character, its definition is pretty well immutable. But this relatively 'deductive' approach is only one schema of definition. In the more common case of *inductive definition*, the sense of a term is not fixed, but a tentative hypothesis in an ongoing research. We do not know at the outset what defines the referents thought of, but gradually try to answer that question by trial and error.

Some philosophers tend to regard definition as arbitrary and conventional, because they think of all definition as predefinition and ignore inductive definition. Furthermore, they confuse word and concept, and consider that since the word chosen for a definition is initially freely chosen and always changeable, the relation of the concept to its meaning is equally open to choice.

The difference between use of a word as such or while intending its meaning should be kept in mind. For example, disjunction can refer to underlying meanings, or to a choice of wording for the same meaning. The

former is substantive disjunction, the latter merely verbal. The former implies a question ("X or Y?"), whereas the latter effectively stresses by repetition ("X1 or X2" just means "X, however named").
Note that the same word may be used for different referents (homonymy, ambiguity); and conversely, different words may be used for the same referents (synonymy, equivocation).[2] This may occur within the same language, or in different languages.

2. Traditional Distinctions

How meaningful and valuable are the traditional distinction(s) between the **denotation or connotation**, or the **intension or extension**, of words or concepts? These qualifications are somewhat ambiguous and equivocal, and the doctrine(s) concerning them are unclear and doubtful. They are colloquially used, but rather variably and vaguely.
The 'denotation' of a term usually means its definition, i.e. to the defining aspect of the things the term refers to; in contrast to the 'connotation' of the same term, which then refers to all non-defining aspects of the things meant by it[3]. Thus, these concepts divide the characteristics of a thing (or class of things) into two sets: the essence (denotative aspect) and the non-essentials (connoted aspects). Obviously, some things are thought of so precisely and exclusively that they have a denotation but no connotation.
Note that these same terms are sometimes interpreted a bit differently, so that 'denotation' refers to the totality of meaning, while 'connotation' is taken to mean more specifically the essence. This can be confusing, since the earlier sense of 'denotation' and the later of 'connotation' mean about the same – so be careful! Moreover, in cases where the object thought of is very simple, the denotation and connotation in their latter senses will be coextensive.
Similarly, usually, when we consider the 'intension' of a term, we focus on the common attributes of the things referred to, and especially on its distinctive, defining property; whereas considering the 'extension' of it, we turn our attention to the multiplicity of things referred to, scattered in the world and in our experience of it. In other words, these two concepts are designed to direct our awareness to different aspects of the same thing: on the one hand, what it is that makes of certain objects a *kind* of thing, versus the *instances* of that kind[4].
Note in passing that these concepts ought not be confused with 'intensity' and 'extent' of awareness (although it might be argued, not very convincingly, that intensive consciousness is more intense and extensive consciousness is more extended). Also note: the expression 'intension' is not identical with 'intention', in spelling or meaning, though they are related; the latter is a verb denoting a cognitive and volitional act by a Subject: intending a word to have a certain meaning is convening such word and meaning to be attached together, so that henceforth the one draws our attention to the other.
Thus, it would appear that denotation (in its first sense) and intension (in its narrower sense) may be roughly equated, and identified with the essence or definition of the thing discussed. However, connotation (in its first sense) and extension are divergent in meaning, the former covering the wider aspects of intension, while the latter focuses on the underlying occurrences of the thing discussed. For this reason, the two distinctions are not identical, though they overlap somewhat.
Sometimes, as just considered, the qualifications seem to refer to one and the same term. Each term is thought to have both a denotation and a connotation, or both an intension and an extension: these are considered different perspectives on the same thing, different aspects of meaning. For example, 'humans' may be thought of with

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[2] Also note the terms: Two words are 'homophones', if they sound but are not spelled the same (e.g. red and read). A word is 'polysemic', if in addition to its original meaning (e.g. the red color), it has been assigned new, incidental meanings (e.g. a 'red' is a communist, due to red being the color of the communist flag).

[3] In colloquial usage, 'connotation' is often taken to suggest association of ideas, or at least verbal association; this is not exactly what is meant here.

[4] We may also apply them to an individual thing, insofar as an individual *in toto* is the sum of its particular manifestations in space and time – so that it is technically very similar to a class.

reference to the properties that constitute each and everyone of them, or as a group of entities with these properties.

Sometimes, however, it seems that different though connate pairs of terms are intended by each of these distinctions; i.e. one term is denotative and its ally is connotative, or one is intensional and the other is extensional. This is suggested by examples often given, such as the contrast between 'humanity' and 'humans' – clearly, though their intents are related, these terms are not one and the same.

Note anyway: these distinctions are not only applicable to 'entities' and their properties and instances, but to any category of thing – 'qualities', 'actions', etc. For examples – the quality 'green' as such and its particular occurrences here and there, or the action 'dancing' and every variant event that can be so characterized, and so forth.

Our ability to intellectually distinguish between a defining property and other observed properties, or between a definition and the things that have this defining property, should not be taken too literally. All aspects of an object's existence, all contents of a class, must continue to be taken into consideration, whatever distinctions are made. Intellectual distinction is not actual separation.

As a practicing logician, I have found these various distinctions relatively confusing and of little use. I do use three of these terms occasionally, but I do not remember ever having really needed to use the notion of 'intension' to elucidate some logical issue. The concept of 'extension' has often been useful to me (as to most other logicians), but this includes within it the connotation of intension[5]. It seems very artificial to me (and many others) to think of the intension of a set of things *apart from* their extension, or vice versa.

It might be suggested that a more modern terminology for this distinction might be 'meaning' vs. 'reference'. But as far as I can see, the intention, meaning and reference of a term are all ultimately the same thing. The difference is only one of emphasis, at best: intention emphasizes an underlying psychological act; meaning signifies a logical equation; reference is a reminder of where to move attention towards.

> Concerning 'entities' – the original suggestion seems to be that the world consists mainly of numerous, discrete bodies (of material, mental or spiritual substance) in space and time, each of which may be viewed as an aggregate of various qualities, states or attributes, and to be undergoing a particular course of motion, change and action.
>
> In one version, one of these properties is the veritable 'essence' of the thing, that which can objectively be identified with and equated to the entity as such – every other property being incidental (though fixed) or accidental (because fluctuating) relative to that. In this extreme version, the entity proper or essence is the 'thing in itself', whereas all else associated with it is mere adjunct to that. Here, the essence is conceived as in principle capable of existing 'by itself', 'independent of' non-essential properties.
>
> A milder version of the doctrine is that any permanent, distinctive and universal property may arbitrarily be considered the essence or that all these together count as the essence. This viewpoint would deny that the essence is conceivable as existing apart from other fixed properties, allowing only accidental properties as irrelevant to or outside the essence, arguing that separation has to be found to occur empirically for such distinction to be meaningful.
>
> Others argue that even non-essential aspects of an apparent entity must be counted as part of it, even though they may be temporary, nonexclusive and/or not general. There are apparent entities, but this concept refers to a whole thing in all its variations – not to any selected substratum. Some conclude from this argument that there is no entity at all, just a changing contiguity of cognized states and events that we arbitrarily mentally isolate together and give this (or some more specific) name to.

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[5] Thanks to the idea of extension, we define 'quantity' (all, this one, some) and develop syllogistic theory (e.g. distribution of terms). I also often use this term with reference to extensional modality. But observe introspectively, and consider how extension is thought in practice: e.g. to think of 'humans' *in extensio*, we mentally project a few human shapes without clear features and perhaps wordlessly refer to some human samples in our memory or currently in our sight. In all, just a few imagined shadows and some features in a couple of sample remembered or perceived cases! And note: even in this minimal evocation, there are intensional aspects.

Another issue arising in this context is that of 'universals' – just what is it that common attributes have in common, that allows us to name two things with one name? I have discussed this issue too at length in other writings – for instance, pointing out the inconsistency of the Nominalists, who do not explain on what grounds they freely refer to 'one' name while forbidding others to refer to 'one' thing named.

In my view, the concept of entity is legitimate inasmuch as there *seems* to be entities already at the experiential level. The mere phenomenological fact that there *appears* to be entities – i.e. that we do not just perceive series of disconnected phenomena and arbitrarily tie them together, but we perceive phenomena as apparently having a certain continuity in spite of perceived fluctuations – this fact is enough to justify an initial concept of entity.

Philosophical rejection of the concept is still logically possible thereafter – but one would have to bring forward some unassailable arguments. I know of no empirical evidence or logical antinomy capable of causing such rejection, so I remain attached to the concept. The onus of proof (or rather of disproof) is on the skeptics, since the concept was based on appearance.

However, I may have already abandoned this defensive posture and joined the opposition, when I argued that all boundaries between things are artificial constructs, in my book *Phenomenology*[6]. So let us stay open-minded!

In the light of these underlying philosophical issues (which are epistemological and ontological, as well as logical), the proposed distinction between intension and extension of a term should be indulged in very sparingly and critically.

With regard to the adjectives 'denotative' and 'connotative', I would suggest an excellent justification of them would be to apply them, respectively, to *the deductive and inductive approaches to definition*. In the former case, we focus on a previously cognized (established or imagined) property as a fixed definition, and wonder what (new or specific) instances it applies to; whereas in the latter case, we repeatedly research and adapt our definition of the distinguishing common attribute of a set of things (they appear someway similar at the outset, and we try to gradually determine exactly why so).

Thus, a term functions denotatively, when we take the definition as given and use it to identify the instances it applies to; whereas, a term functions connotatively, when its definition is still open and variable, and we are rather led on by our wordless insight (or even vague feeling) that the things we so named do have some distinctive common property that we have only to find (and thus justify our initial search). These approaches remain flexible and interchangeable. Occasionally, we may start in one mode, and later switch to the other, according to need.

3. Logic and Linguistics

Logic and linguistics overlap to some extent; but they are not coextensive or in a genus-species relation. They are considerably different studies, though they have interests in common. Linguistics studies statements as words, sentences and texts, with little interest in their underlying meanings – compared to logic, for which they are concepts, propositions and arguments, deeply charged with meaning.

Some properties of words are of interest to both disciplines, though with perhaps slightly different perspectives. For instance, grammarians have observed that words may vary in form according to their position in a sentence. For example, in "I do not like what this is doing to me", the pronouns "I" and "me" (or he-him, they-them, etc.) refer to the same person – but the former concerns that person in position of subject, while the latter concerns him or her as object. For grammarians, this observation is mainly about use of pronouns (morphology of words) and sentence structure (rules of syntax)[7].

They may point out that some words are different because, though they refer to the same referent, they refer to it in a different *relational position*. This comment is not however merely about language; clearly, it has semantic undertones, i.e. it refers to some extent to the underlying meaning of some of the words. The logician would

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[6] See chapter 4, sections 4 and 5.

[7] In French grammar, it is the distinction between the nominative and the accusative cases.

emphasize that aspect, and conclude: we may be justified to use a different name for the same thing, if we wish to signify a difference in our perspective towards it in a given context. In such cases, the word change is technically useful, as an aid to ordering and clarifying thought.

The acceptable wording and order of words in a sentence, in a given language, is an empirical given for linguistics. Some variations in wording and order may be permitted within that language, or may occur over time, or comparing one language with another; but outside such existing range of rewording, some sentences are grammatically unacceptable. I could not legitimately, in English, write: "some sentences unacceptable are grammatically", even if you understood me![8]

Our natural languages, by the way, have many imperfections. In English, for instance, we lack a 'common' (or 'neutral') gender, i.e. one that we could use for both males and females indifferently. This forces us (in this age when discourse is addressed to women as well as men) to make clumsy statements using "it", "one", "we", "he or she" or "they". Another example is when pronouns become confusing because two or more subjects are discussed with the same pronoun; e.g. in "after they fought them and they became blue in the face" – it is not clear to whom the latter "they" refers, those who fought or those who were fought.

There are aspects of language, which emerge from the serial arrangement of words in sentences, which are not directly relevant to logic. Contrary to what many people suppose, logic is not overly concerned with such issues, provided the intention is reasonably clear. For example, logic does not care whether we place the subject, copula and predicate of a proposition in that order, or in any other order we please[9]. Logic does not even require that we express a proposition in words – it suffices if we wordlessly intend some meaning in our thought, for logic to evaluate our underlying thought.

Notwithstanding, the verbal sequence is usually intended to convey some logically relevant information. Thus, the categorical form "S is P" could be reshuffled any way we want without affecting its meaning; but in English, we have the convention that the term before the copula "is" is intended as the subject and the one after as the predicate. Similarly, in "X becomes Y" a chronological sequence is intended from X to Y, and in "if P, then Q" a logical sequence from P to Q. The tacit conventions enable us *to avoid lengthy explanations* every time as to which item precedes which. They serve to convey a maximum of information in a minimum of words.

Another interesting example (more comparatively): the adjective generally comes after the noun in some languages (e.g. in French, le chien noir), while in others it is placed before (e.g. the black dog). Logic might ask: which is more "logical"? The French order seems more rational, because one would want to think of the entity (dog) before thinking of its attribute (black). Perhaps the English order reflects a more empirical stance: one sees the entity's particulars (blackness) before realizing its totality (dogness). In conversation, then, the French put you in the overall picture first and then give you details, whereas the English require you to hold onto details before you even know what they are about![10]

One could suggest that different languages are similar in many respects due to their having common objects, but dissimilar in many respects due to their handling the serial aspects of verbal discourse in various ways. The common objects naturally restrain divergence; whereas issues like order of words are relatively accidental, so that their treatment is optional and conventional.

Similar comparisons could be made in all fields of linguistics. The peculiarities of each language in comparison to others may, upon reflection, seem more or less "logical" or "natural".

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[8] Noam Chomsky (American, b. 1928), the founder of modern 'generative grammar', distinguishes between 'deep structure', which consists of facts and rules found common to all languages, and 'surface structure', which refers to the grammars of specific languages. Incidentally, in my view, deep grammatical structure is an *ex post facto* construct used by the grammarian to summarize features found in all languages. Deep grammar differs from logic as such, in that the former is essentially verbal whereas the latter can be pre-verbal. But the two converge in their common concern with what underlies actual language.

[9] This example of subject, copula and predicate, by the way, is often given as an objection to formal logic – but such critics merely display their own misunderstanding, their own confusion between logic as such and the words through which we may transmit it.

[10] It is interesting that historians of philosophy usually classify French philosophy as more rationalist, and English as more empiricist.

Logic is also, of course, interested in the underlying psychological and material facts. How thoughts are put into words in accordance with a language and its rules is a fascinating object of study, which some linguists have made valiant inroads into. They have, for instance, pointed out how verbalization requires comparison of the present situation to similar ones in the past, so that the language used is in conformity with accepted practice, even while it is necessary to adapt creatively to the new variation.

Thoughts arise in our minds gradually; they are verbalized serially, word after word; they are gesticulated, spoken or written down in sequence, too. Discourse is thus inevitably shaped like a string of cognitive and verbal events. Thus, even though no particular thought or word order need be considered more natural or logical than any other, it must be acknowledged that some sort of ordering will occur. It is therefore useful to adopt linguistic conventions, as we indeed do, to standardize and thus facilitate our discourse.

Logic may also acknowledge that, once such linguistic convention is adopted by a population group, it may somewhat affect their "ways of thinking". Different languages instill different habits of thought. Indeed, the reverse may be historically true in some cases; namely, that certain habits of thoughts were solidified in the early stages of a language[11] (as a result of which the ancestors of a group continue to influence their descendants).

There are other respects in which logic and linguistics may or may not have common interests. Certain cultural, social or political aspects of language may be of little relevance to logic. For instance, rhetoric may interest linguists from an aesthetic point of view or as an effective way to political power, while the logician will focus exclusively on the validity or fallacy of the argumentation involved. For logic, poetry is of little interest, except as a nursery for the cultivation of new linguistic forms.

For the logician, language is primarily a tool of individual thought, facilitating acquisition and storage of knowledge, and only secondarily a tool of social communication and action. In principle, a human individual could and would invent a language to think with, given sufficient time (and genius and motive). In practice, as some famous "experiments" in isolation have shown, no one would have the enormous amount of time required (not to mention the cerebral power and occasion). Historically, language has arisen very gradually[12] and variously, as a collective achievement of mankind.

Indeed, the intelligence of mankind (our biological ability to think conceptually and rationally) did not antedate language ready-made, but evolved and developed in tandem with language. Human thought, language – and the underlying bodily organs – grow together, feeding off each other. Each little advance in the one requires or generates an advance in the other. Results are cumulative, building on past acquisitions. But anyway, such small advances must occur in some individual(s) to begin with, before they become a collective acquisition.

4. Dialogue

A Russian Marxist linguist of the early 20th Century (whose name I have forgotten) has suggested that all monologue is dialogue – and I agree with that to some extent. Monologue is often virtual dialogue – if only with oneself, or with an imagined other[13] (such as a future reader of one's books). However, dialogue does differ from mere monologue in that, within real dialogue, each unit of monologue is successively tailored in some way (which may or not be relevant) to reply to the previous remarks of one's respondent, the intent being to actually effect a change in the other's beliefs, attitudes or behavior.

In **conversations** between two (or more) people, information and reasoning can be transmitted from one to the other – one way, or back and forth – provided they have certain common grounds. They need to have some past or present (or future) common experiences, which make it possible for their words to have mutually agreed referents.

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[11] Why do some languages involve more "flexion" than others? The differences may not reflect "ethnic" characteristics, or genetic makeup, but perhaps simply the accident of some first thought taking a certain shape rather than some other, and then being imitated on and on.

[12] Though some linguists suggest that the early languages were not as simple they expected. There may, then, have been some quantum leaps in the evolutionary process.

[13] We may even in some cases fantasize specific responses from our imaginary respondent.

These experiences – together with others that each separately has – will stock their respective minds with data bases. They may have already discussed and harmonized their databases to some extent, but never fully.
Each, within his or her mind, has somewhat ruminated over and digested at least some of that pool of data. But they have probably not done so in quite the same way or to the same extent. For their knowledge bases are not identical, and the effort and processes they have put into assimilating them are bound to differ. The courses of their lives, their senses and brains, their intellectual powers and logical skills, and their characters are naturally all different. So we say they have different contexts.
As the two converse, their minds will refer to shared memories, of perceptions or conceptual information or logical inferences. And all this is of course what makes understanding between them possible.
But to correctly depict interpersonal discourse, it is equally important to emphasize the *mis*understandings that occur! Information and reasoning can be correctly transmitted to some extent, but there will likely always be *failures* of transmission. And of course, the latter (the blanks and missteps) can equally affect the resulting interaction between the people involved.
Each one of us sees and hears what he or she more or less prepared to see and hear. We take in what we please, and ignore or keep out the rest. We tacitly or explicitly reword the messages received, to assimilate them within our own framework and knowledge context. Value judgments come into play, whether in the structured form of an ideology or in vague subconscious waves – turning the discourse received into a somewhat other discourse.
Knowledge transmission requires efficient communication. The speaker or writer must be good at formulating just what he or she means, clearly, precisely and concisely. People often interpose irrelevancies that needlessly divert attention from their main message; they embellish their discourse for psychological or social reasons, i.e. trying to put across some additional, unrelated message(s).
At the other end, the interpretation made by the auditor or reader does not inevitably match the intended message, because he or she may not be as receptive, focused, knowledgeable and logically skillful as required.

5. Poles of Duality

Concerning the principle, advocated by many, especially oriental, philosophers, that poles of duality (e.g. good-bad, light-dark, etc.) arise together – certain comments are worth making.
Oriental philosophers pursue a non-sorting mode of consciousness, the awareness prior to the making of distinctions; for this reason, dualities are obstacles in their eyes. Such Monist consciousness is, however, rarely if ever attained.
I would reply, ontologically: since we can conceive of Monism, then we can also conceive of a universe with *only* good or *only* light, etc.; i.e. a world with one polarity of such dualities is logically possible. Of course, this would only be strict Monism, if this quality was quite alone and no other quality was found in the world (i.e. not just not the other polarity of that quality). Of course, also, we – those now conceiving of that world – would not be distinguishable in it, since then there would be two things in it – viz. object and subject.
But note such solitude of existence could not apply to just any quality. Negative concepts like ‘imperfect’ cannot exist alone[14]; i.e. an *only* imperfect world is inconceivable, as some part of it must remain perfect to exist at all. However, this remark may rather concern the next observation.
From an epistemological and psychological (rather than ontological) viewpoint, there is some truth in the said oriental belief. That is, *the idea* of good or light is not possible without *the idea* of bad or dark. Imaging one pole necessitates our *also bringing to mind* the other pole for the purpose of contrast. This is due to the mechanics of concept formation: it functions by *making distinctions* as well as by identification of the things distinguished.
Because it is only by way of contrast to dissimilars that similars can be classified, every word, every concept, has to make some room for its opposite; we cannot comprehend a term without having to think of its opposite. Thus, one might suggest: although logically, X totally excludes nonX – psychologically, “X” may be said to be say 99% “X” and 1% “nonX”.

[14] As Alan Watts pointed out, somewhere.

Another point worth making, here: contradictory terms, such as X and not-X, have equal logical status, i.e. their formal treatment is identical; however, phenomenologically, affirmation and denial are very different: the first signifies an actual experience (phenomenal, through the senses or mentally, or non-phenomenal, intuitively) – whereas the latter signifies a rational act, a conceptual report that some anticipated experience has not occurred. Strictly, perhaps, experiences should be verbalized affirmatively, while negations should be cast in negative terms. In practice, this is rarely followed.

A positive word like 'silence' or 'stillness' may indicate a negative event (no sound, no move). However, even in such cases, there may be an underlying positive event; in our examples, although silence refers to the non-perception of any sound phenomenon – we may by this term mean rather to refer to our will to block sounds, which volition is something positive, though without phenomenal character, known intuitively.

Similarly, I suspect, some negatively cast words may in fact refer to positive experiences, although there may be a good reason why the negative form is preferred. For example, 'unabashed' simply means without apology, but viewed more closely refers to certain behavior patterns; so, though negative in form, it is rather positive in intent. However, the negative form is not accidental, but serves to indicate the missing ingredient in the behavior patterns, which makes them socially questionable.

4. About Formal Logic

1. Form and Content

The notions of form and content are simple enough, though the uninitiated must first have them explained. ‘Form’ and ‘content’ are relative terms used in different contexts within formal logic. The basic idea is that of container and contained.

In one sense, a word is a form, and the word’s meaning – the real or imagined things it refers us to (i.e. that we intend when we use the word) – is the content. Thus, the personal name ‘Joe’ refers to an individual man we know by that name; the common name ‘man’ refers to an open-ended group of individuals like Joe, Jim, Nathalie and others.

We can also call any abstraction (or concept) a form and its (perceptual or intuitive) concretes the content. In this perspective, our concept of Joe is a collection of an immense number of sights, sounds, etc., across time and in various circumstances, that we have found fit to unify under this one idea. Similarly, in the case of general concepts like that of man: they refer to a presumed unity in the midst of large ongoing collections of material, imaginative and introspective data about Joe, Jim, etc.

Till here, we are in the everyday practice of logic. We enter the more abstract field of formal logic, the moment we posit a symbol like ‘X’ or ‘Y’ to stand in for *any term* like ‘Joe’ or ‘man’. At this stage, we formalize propositions.

For example, categorical propositions are written: ‘X is Y’, where X is the subject, Y is the predicate, and ‘is’ is the copula, i.e. the intended relation between X and Y. Note that ‘is’ is a form in the preceding sense; it is a bit less abstract than ‘X’ or ‘Y’. Note also that the relation we signify by ‘is’ does not exist apart from its particular terms (X and Y, in this case); it refers to the cement between them, which is also part of them. It is only cognitively that a distinction between these items exists; at a concrete level, they are inseparable.

Besides ‘is’ there are many other categorical relations, including copulas like ‘becomes’, ‘makes’ and so forth. Moreover, categorical propositions have other features not so far mentioned that are on a similar level of abstraction as the copula, such as the quantity (all, some, this one) and the modality (must be, can be, actually is).

We could therefore further formalize categorical forms, by means of symbols like (say) “Q(X)MR(Y)”. This concoction is of little use, however, because little can be said about categorical propositions viewed so generally. More interesting is to realize that there are other propositional forms, like the comparative (e.g. “X is more Y than Z”) or the hypothetical (e.g. “if p, then q”), for instances.

At this stage, logicians propose a general symbol, say: “P” (or “Q” or whatever), to stand for just *any sort of proposition*. This artifice of formalization has been found very useful. For instance, the p and q in “if p then q” are such general symbols. They allow us to study what the form “if-then” entails, without having to specify what kind of proposition p or q might represent in a particular case. We can study the “if-then” relation as such, in a very general way.

Formalization, then, is just a way to *freely study the logical properties of different propositional forms, without regard to their content*. A ‘form’ is simply a shorthand expression for any number of particular propositions, or ‘contents’. What we say about the form applies to all the contents. The wider the form, the broader the range of possible behavior, and the less rules there are for it. If any content is specified, or a more specific form is considered, the behavior pattern becomes more narrow, and the rules more restrictive.

2. Singular Subject

A singular subject is usually *identified*:

- indicatively (as "this X"), or
- by name or pronoun (e.g. "John" or "he").

But there are also *unidentified* singulars, which may be:

- categorical (as in "*someone* stole my car"), or
- conditional (as in "*whoever* it was, I'll find him").

The same distinctions apply to plural subjects, groups: "these X" is indicative; "The Brothers Karamazov" are named, "they" is the corresponding pronoun; "some people" and "whoever they be" are the unidentified group of individuals.

The singular subject "**This X…**", which is sometimes read as "This thing, which is an X,…", may be further analyzed as follows:

1. First, I say "**this**" (demonstratively pointing to something, or in some other way directing attention to it), to produce in the auditor an awareness of a specific object, i.e. the minimum knowledge of it given within the perceptual glance or remembrance produced.
2. Secondly, I categorize the object as "**X**", i.e. classify it (occasionally, exceptionally, if the sentence is intended to convene on a word or transmit existing language, I just name it). This adds to the auditor's knowledge, making him aware of the character X apparent in the object previously indicated (or, in the case of mere naming, aware of the name).
3. In a third stage, I may propose a predicate, e.g. "This X **is Y**", thereby more precisely categorizing the object and increasing knowledge of it. Such predication may be based on some experience or on a rational inference (such as syllogism).

The point being made here is that propositions are not ready-made, static wholes (as some modern logicians seem to regard them), but thoughts that are gradually built up in the mind and comprehended stage by stage. *Subsumption is not a mere abstract relation, but signals a mental process of becoming aware of and assimilating information.*

Likewise, a sentence is not mentally or orally formed in one shot, but gradually emerges. Our first try might just be an approximation of what we mean, expressing a thought that as yet remains ambiguous and uncertain in some respects. Then, reflecting on what we have just said, we might be moved to attempt a clearer, more precise expression of our insight or observation. Or we might discover and repair logical or grammatical faults in our previous statement. Sometimes, all such refinement is achieved on the first try; other times, we need successive tries to obtain a satisfactory result.

Conversely, when a logician seeks to logically evaluate some discourse, he has to do a considerable amount of preliminary linguistic analysis[1], to properly and fully interpret what is being said, before issues of formal logic come into play. This background processing, be it conscious or subconscious, is often insufficiently stressed by logicians.

3. Special Forms

The form "**It happens that X**" or "**There is X**" is used to refer to events without pressing them into a strict subject-predicate form. For example, "It is raining" could have been stated as "Water drops are falling from clouds in the sky" – but we colloquially prefer the brief and phenomenal description, acknowledging or indicating the fact that there is rain in the field of vision (out there somewhere), without specifying whence this rain is making its appearance (the sky, clouds).

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[1] Such as that taught by J. Searle.

In such cases, we may retain the copula "is" to signify the presence of something, but we do not intend thereby to force the event described into a standard "S is P" format. The "it" in "it is raining" is not intended as an authentic subject. The latter (the sky, clouds) remains tacit. The form used is only superficially like the standard form.
Contrary to the certain critics of 'Aristotelian' logic, we do not hold that "S is P" is the only form of proposition. There are other categorical forms, as well non-categorical forms. The job of logicians is precisely to notice and investigate an ever-widening circle of forms and arguments. Nevertheless, the "S is P" form is basic to rational knowledge. Propositions like "it is raining" do not belie this standard, but require reference to it to be fully clarified.
The question to ask in differentiating a form is – is *its logical behavior* different? If the eductions and syllogistic inferences from it are different from the standard form, then the deviant form should certainly be given special treatment. If its inferences are essentially the same, then logicians need not give it more attention than necessary.
Logicians have tended to regard propositions as built up from their parts (terms, copulae and operators), but the process is in truth more *inductive*: we first look upon the whole event (e.g. a woman smoking), and out of many such events, by comparison and contrast, we mentally isolate the parts (woman, is, smoking). Only after this, can we name the parts and put the words together in a sentence.
All propositions are concepts, like the terms, copulae and operators (e.g. if-then, either-or, etc.) that constitute them. If they have (established, existing) referents, they are "true"; if not, not. Likewise, all concepts are implicitly propositions, since they affirm their referents (tentatively or definitely to exist). Forms like "There are…" or "It is…" reflect this technical equivalence between whole and partial concepts.
Note that such forms can also be modal: "There might be…", "There are sometimes…", "There is necessarily…", etc.

4. Fuzzy Logic

One function of "fuzzy logic" is to process concepts whose referents are not clearly definable.
Logicians in their theories should be careful to reflect the varieties of human thought processes, and not try to put their square pegs in round holes, e.g. by demanding that all subjects be defined by a universal predicate.
Normal concepts are defined by a common and distinctive character, and are therefore mutually exclusive: anything *with some* X in it is an X; and anything *without any* X in it is a non-X. However, some concepts refer to the *predominance* of some character Y, without insisting on the total absence of its contraries.

> For example, the term "Indo-European language" refers to words and grammatical forms that are *mostly* Indo-European in origin, although some other roots and constructions (e.g. Semitic) may admittedly be found in it. Or again, the Bible's "historical books" are *not only* historical, but contain some legal and other material.

The "fuzziness" of such concepts is not due to their having *not yet* attained (inductively) an optimum clarity of definition – it is *inherent* to their subject matter. It is not a conceptual flaw, but a reflection of the mixed state of the things referred to.
How can such concepts be logically processed according to Aristotelian syllogism? An example is the third figure mood:

> Most Q are R, and
> Most Q are P
> Therefore, some P are R.

This argument is strictly valid, since the middle terms ("most Q") of the two premises overlap. If the effective middle term is a "fuzzy concept", the premises would both apparently refer to "all Q", but in fact be based on the form "each Q is mostly Y, though partly non-Y".
One should of course be careful in such contexts not to commit the fallacy of Four Terms. This formal fallacy is very common in practice, usually by way of *ambiguity* – the middle term verbally seems (or is made to seem) the same in both premises, but in fact does not refer to the same cases, so that any inference linking the major and minor terms through it is invalid.

5. Added Determinants

Certain 'arguments' remain informal, because they cannot be formally validated. They are intended more rhetorically or poetically, than strictly logically. They are commonly used because of their usefulness in discourse: they make a point with a punch.

These include processes that have been labeled 'added determinants' (or 'complex conception'), although I would hesitate to consider such processes to be sufficiently uniform to be clearly categorized. Rather, I would speak of a loose collection of diverse forms: an open-ended catchall for leftovers.

A couple of examples should suggest the degree of variety.

(a) "Power corrupts – absolute power corrupts absolutely". A statement like this is not meant as an argument; rather, the first general statement is *augmented* by the second one, which quantifies it and specifies the extreme degree of it.

By syllogism, we can *infer* from "power corrupts" that "absolute power corrupts" – but not that the latter "corrupts absolutely", which is an additional observation.

It could also be argued that "power corrupts" refers to small quantities of power, so that we may *a fortiori* infer that larger quantities of power corrupt even more. Note however that such inference would not be in accord with the sufficiency ("*dayo*"[2]) principle.

In sum, the statement "power corrupts" does not by itself reveal whether there is concomitant variation and proportionality between power and corruption, and so cannot *formally* imply that "absolute power corrupts absolutely".

(b) "All love is wonder; if we justly do account her wonderful, why not lovely too?" Here, a John Donne intent on seduction argues that given 'love implies wonder' it follows that 'if the woman is lovely, she is wonderful' (actually, he reverses the conclusion, but let us ignore this poetic license).

Such an eduction is of course formally open to debate. The premise seems to be a psychological statement, that being in love gives rise to an experience of wonder; whereas the putative inference, characterizes the female object of his attentions as lovely and wonderful. The process is made to seem like an application of a generality to a particular case. The terms are admittedly not unrelated, in that the poet's psychological condition affects his perception of the woman. Still, the shift from his rather subjective assessments to quasi-objective characterizations is not strict logic.

Note the grammatical differences between the above two examples. In (a), a more or less common determinant (absoluteness) is added, as an adjective and an adverb respectively, to the initial noun and verb. In (b), two abstract nouns are turned into adjectives relative to some added third noun (the woman); in this case, the addition is a 'determined' rather than a 'determining' factor.

Many more examples can be adduced, to show that it is best not to quickly generalize. Each example encountered should be analyzed individually, to understand both its power of conviction and its hidden sophistries.

6. Relational Expressions

When considering a propositional form commonly used in our thought and discourse, we should identify its minimum meaning, the most widely applicable interpretation.

Thus, the form "**Unless P, Q**" means that if P is absent (or false), Q is surely present (or true), though it does not really tell us whether in the presence of P, Q is necessarily or just possibly absent. Thus, this form implies "if not P, then Q" – and "if P, *not-then* Q", though possibly (in some cases) also "if P, *then not* Q".

The form "**Though A is B, C is D**" may be variously interpreted. This could just be intended as a statement of *contrast*, drawing attention to the divergent attributes (respectively B, D) of the subjects (A, C). Or it could be a

[2] See *Judaic Logic*, chapter 4.3.

statement intended *to undermine or incite rejection of* some theory of consequence – i.e. perhaps someone thought that "if A is B, then C is *not* D", and here we are told that this alleged connection is in fact absent. In either case, note, the underlying relation (between the theses 'A is B' and 'C is D') is conjunctive rather than conditional.

The form "**As a B, A is C**" may be expanded to the syllogism: "A is B and all B are C, therefore A is C". Notice the underlying general statement involved (tacit major premise). Incidentally, this form is often used as a means of ego construction: we (A) identify with a certain denomination (B), and on this basis attach to a certain behavior pattern (C); for example, "as your father, I advise you not to do this!"

More generally, a statement of the form "**Since P, Q**" is not simply a proposition, but an abridged argument. It apparently intends the apodosis: "If P, then Q; and P; therefore, Q". Usually in practice, it means somewhat more, in that there may be a tacit major or minor premise R that we take as granted and understood. In such cases, we would render it as: "If (R +) P, then Q; and (R +) P; therefore, Q" (the argument is traditionally then referred to as an 'enthymeme').

Note also: very often in practice, the relationship between the antecedent and consequent in "Since P, then Q" is not mechanical, but volitional. For example, "Since you did this, I will do that!" In such cases, though the underlying conditional proposition has natural modality, and the consequent does not automatically follow the antecedent – i.e. the "then" is a bit of an overstatement.

Such overstatement of connection is common in discourse, even in purely mechanical contexts, to repeat. As long as some conditions remain tacit, the "then" involved is not to be taken literally. For example, in "if the machine has this extra gadget, it functions continuously", it is clearly intended that all the other parts of the machine, in addition to the gadget mentioned, also play a role in producing the movement described.[3]

Another form worth mentioning is "**It (P) is as if Q**". Here, 'it' (P) refers to some event, condition, result, or connection, and 'Q' to another; and 'is as if' indicates that if the two are compared they will be found similar to some degree. The degree of resemblance might be qualified by adding "a bit" or "much" to "as if".

7. Disjunction

With regard to disjunction, the following insights are worth adding to my past comments, because I have found many people to be confused by the varieties of senses the operator 'or' may have in ordinary discourse.

The expression "P or Q or …" is very vague; it only informs us that *some* manner of 'disjunction' is involved, but does not tell us *what* form it has. The operator 'or' is thus, in formal logic, to be understood very broadly.

This indefinite sense is somewhat narrowed down by making the distinction between 'exclusive' disjunction, for which the form "P or else Q …" may be agreed, and 'inclusive' disjunction, for which the form "P and/or Q…" may be agreed.

Thus, "P or Q…" may be taken to formally mean: "P or else Q…" and/or "P and/or Q…" is/are true. The exclusive and inclusive forms of disjunctions are thus more specific and explicit; and each of them implies the more generic and indefinite form.

If only two items (P, Q) are involved, exclusive disjunction just means "if P, then not Q" (and vice versa), whereas inclusive disjunction just means "if not P, then Q" (and vice versa). Thus, the first refers to the logical relation of incompatibility, while the second refers to exhaustiveness.

Moreover, exclusive and inclusive disjunctive propositions, though not as indefinite as generic disjunction, are themselves vague or open forms. The form "if P, then not Q" leaves unanswered the question as to whether not-P implies or does not imply Q; and likewise, the form "if not P, then Q" leaves unanswered the question as to whether P implies or does not imply not-Q.

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[3] Generally, in causation (ignoring natural spontaneity) in contrast to volition, sudden motion cannot emerge from static conditions – a trigger is needed. Thus, as I mention in *Volition and Allied Causal Concepts* (chapter 8.1) causation of motion refers to the transition from "if x, then y" to "if not x, then not y" or vice versa, rather than to a state x (or non-x) completely causing a movement y (or non-y). Although some if–then statements seem to suggest otherwise, it is only because they refer to partial causation, i.e. they conceal tacit factors.

If the two forms are combined, as is formally possible, they together imply P and Q in contradiction; if P and Q are incompatible but not exhaustive, they are contrary; if they are exhaustive but not incompatible, they are subcontrary. In common discourse, contradictories are placed in the form "either P or Q"; contrariety is expressed through the form "P or Q or neither"; and subcontrariety, through the form "P or Q or both".

Therefore, we could say that "P or else Q" means: either "either P or Q" or "P or Q or neither"; and likewise, "P and/or Q" means: either "either P or Q" or "P or Q or both". Thus, the indefinite form "P or Q" can also be read as: "P and Q are either contradictory or contrary or subcontrary".

Note that our choice of the words "P and/or Q" to express the generic relation "if not P, then Q" is clearly not very appropriate, suggesting that P and Q are compatible, whereas they need not be so. The term 'inclusive' disjunction suffers from the same imperfection, seeming limited to subcontrariety. Since that terminology is too well established to be changed, we must simply ignore these misleading verbal connotations.

Thus, to summarize, disjunction may be considered as a generic relation between two terms or theses. This relation may be specified as exclusive or inclusive (or both); or even more precisely as contradictory, contrary or subcontrary. Contradiction occurs when both exclusive and inclusive disjunction are applicable.

> All this can be compared to saying of two items (P, Q) that they are "related by implication". This does not tell us whether "P implies Q" or "P is implied by Q" or both. If both directions of implication are true, P and Q are mutual implicants; if only one is true, then either "P subalternates Q" or "P is subalternated by Q".

If more than two terms are involved (P, Q, R…), the formulas are more complex. Namely, in exclusion: *if any one item is true, all the others are false*; in inclusion: *if all but one item are false, the remaining one is true*. Note that, in the former case, no two items are compatible; whereas, in the latter case, the exhaustiveness concerns the complete set of items, but if we take any two of them at random, it does not have to apply.

These two relations between three or more items may, as with two items, occur in combination or separately. In such cases, distinguishing between 'or else' and 'and/or' becomes impractical, and the best course is to use 'or' and verbally define the intended set of relations. Note that matters may be further complicated in some cases because some of the items in the set have special relations that the others lack – i.e. we may intend *mixed-form* disjunctions. In such situations, explicit clarifications as to what we mean are all the more necessary.

We should keep in mind that much of the terminology in this field was invented by logicians; it is not a product of popular discourse. The word 'disjunction', etymologically connoting negation of conjunction (i.e. separation), first appeared in the 14th Cent. The conceptual distinction between 'exclusive' and 'inclusive' disjunction was made much later, and these terms were apparently coined only in 1942 (according to the Merriam-Webster Collegiate Dictionary).

The clear distinction between contradiction, contrariety and subcontrariety is, however, ancient, dating back at least to Aristotle, if not earlier. The concept of incompatibility is doubtless earlier than those of contradiction or contrariety; though these three terms may originally all have had the same meaning. The concept of exhaustiveness, being more subtle, probably arose later; and that of subcontrariety no doubt much later.

However, the word 'or' was not invented by logic theorists, but is found (in some form or other) in common discourse since way back. Certainly, the underlying notion must be very ancient. With regard to its verbal expression, I am not so sure, having noticed that discourse in the Talmud often struggles with this. For instance, it says (*Sabbath* ב"פ): "doubting sunset, doubting not sunset, [don't do so and so]" (where we might have said: "if in doubt as to *whether or not* the Sun has set, don't…"). The items are there listed, but their relation of disjunction is left tacit, as if there was no word for it (though words existed long before in Biblical Hebrew).

The many modern variants of the word 'or' – phrases such as 'or else', 'and/or', and others[4] – are also apparently natural linguistic developments, although evidently much more recent. They presumably arose as more or less deliberate attempts, within some ordinary discourse, to remove some of the ambiguity in the word 'or'. Finally, of

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[4] Note also the forms "Only P or only Q", "P alone or Q alone", "P or alternatively Q", "P, respectively Q", "P or even Q"; and there are probably many more. The meaning may not always precisely or only correspond to the ones considered here. For instance, in "I could use a hammer or even a stone for this job", the hammer is my first choice and the stone is rather a last resort, and I would not use both. Note how, although usually indifferent, in some cases, *the order of listing* of the alternatives (P, Q…) is relevant, signifying an order of preference.

course, some logician came along and conventionally 'froze' the predominant meaning of each variant, so as to facilitate formal treatment.

Let us now examine the probable development of the notion of 'or'. In English, the word is etymologically related to the word 'other' – suggesting that the second item listed is somehow 'other than' the first item listed. Now, 'other than' could be interpreted as '*opposed to*' (suggesting exclusive disjunction) or as '*different from*' (suggesting inclusive disjunction).

It might be thought that the first interpretation most accurately reflects the original meaning of 'or'; some dictionaries seem to claim this. But in my opinion, both interpretations were vaguely intended from the start; for there is a common notion underlying the two.

The 'or' within exclusive disjunction means 'not together'. Here, "P or Q" means P *to the exclusion of* Q, i.e. P only, P alone, whence P without Q (or vice versa, provided P and Q are not both true). The 'or' within inclusive disjunction means 'not same'. The latter is softer: it allows that P may occur *without* Q, but does not insist on it (or vice versa, provided P and Q are not both false). The two forms are thus analogous in some respect, and the difference between them may be viewed as one of degree.

The disjuncts (P, Q) are rightly labeled 'alternatives', to indicate the essential fact of their being considered 'in succession'. In exclusive disjunction, the alternatives displace and replace each other, whereas in inclusive disjunction, they do not necessarily do so. In the latter, the items are *merely listed as individual possibilities*, without prejudice as to whether they have to be separate or may eventually not be so.

We very often need to draw up a list of possibilities, without at the outset deciding whether all the alternatives are mutually incompatible, or even knowing full well that some or all of the alternatives may occur together. Sometimes, in writing, we simply use a comma instead of the word 'or' in such lists, so as to just avoid this issue of relation between the disjuncts. Because the practice of simple listing has obviously always existed in discourse, it cannot convincingly be argued that exclusive disjunction antedates inclusive disjunction.

We must thus suppose that *a broad sense of the word 'or', which leaves open the issue of whether the disjunction is exclusive or inclusive or a mix of the two*, has always existed (in some form or other). It follows that all senses of the word 'or' are equally legitimate in discourse, but we must remain aware as to how it may be intended.

The speaker or writer should opt for clarity; and the hearer or reader should carefully weigh the word in each context. In practice, sometimes, we make no verbal distinction between the disparate senses of 'or', letting context determine intent. In case of doubt, only the minimal, most indefinite sense may be assumed – i.e. the sense that is neutral with regard to the exclusive/inclusive distinction, i.e. the common property of all disjunctions.

Note that some people tend to use the unqualified form "P or Q" for exclusive disjunction, and get more explicit in cases of inclusive disjunction; while some people do the exact opposite. Different people behave differently, and even the same person at different times; so, no hard and fast rule can be handed down.

It is, note well, always possible to say exactly what we mean when we wish to, or when (as in formal contexts) we must. We need only declare our preferred language, and that becomes our convention in subsequent discourse.

With regard to the two constructs "P or Q *or neither*" and "P or Q *or both*", the following may be added. Here, "P" means "P alone, i.e. without Q"; "Q" means "Q alone, i.e. without P"; and "both" means "P and Q", whereas "neither" means "not-P and not-Q". Thus, each form clearly lists all the alternative events acceptable to it, *leaving out* the defining unacceptable alternative – viz. "P and Q" in exclusive disjunction, and "not-P and not-Q" in inclusive disjunction.

The 'or' operator throughout these two forms is therefore the same: it refers implicitly to exclusive disjunction. The final disjunct 'or neither' or 'or both' serves to declare the disjunction not only exclusive, but also exhaustive. Note that we may construct similar forms with more than two disjuncts, of course (using as our last disjunct 'or none of them' or 'or all of them').

The vague "P or Q" form is often intended as an abbreviated version of these explicit forms. That is, when we use it we may be tacitly thinking and implying 'or neither' or 'or both', as the case may be, but we omit to say that explicitly out of laziness or the desire to be brief. More often than not, we leave the matter open, simply because it is not very relevant to our present discursive needs. Very often, too, as already pointed out, we have not yet determined the interrelations between the theses.

Lastly, note the function of the word 'either' at the beginning of a disjunction, be it exclusive or inclusive. This word serves to signal that the set of (two or more) alternatives listed is *exhaustive*, i.e. that the list is complete and

there are no more alternatives to consider. Thus, in the case of "either P or Q", the intent is that "P without Q" and "Q without P" are the two only acceptable outcomes.
Similarly in cases with more than two alternatives, i.e. "either P or Q or R or…": all possibilities are declared foreseen. If the multiple disjunction is meant exclusively, the final outcome will consist in affirmation of *only* one of the alternatives and denial of all the others. If the multiple disjunction is meant inclusively, the final outcome will consist in affirmation of *at least* one of the alternatives, though possibly more or even all of them.
The word 'either' delimits a list. A list without it (i.e. just "P or Q or…") is normally considered open – i.e. it may be incomplete: we may have intentionally or unintentionally ignored some other alternative(s).
It is a redundancy to add the word 'either' in front of a disjunction ending in the words 'or neither', 'or both', or the like – since, as we have seen, these words already signal exhaustiveness. The word 'neither', by the way, simply means 'not either' – i.e. it indicates that there are indeed other alternatives than those listed. Thus, in "P or Q or neither", the 'neither' refers directly to "not-P and not-Q" (i.e. "neither P nor Q"), but also less directly to unstated alternatives "R or S… etc."
Finally, it should be kept in mind that there are different modes of disjunction. In addition to the logical mode, there are the natural mode and the extensional mode, as well as the spatial and temporal modes. These are often mixed and undefined in ordinary discourse. For example, 'or both' or 'or neither' may be intended as a statement of fact (*de re* modality) or as something logically conceivable given our ignorance of the facts (*de dicta* modality). Failure to take such ambiguities into account can lead to some quite fallacious interpretations!

8. Material and Strict Implication

Material and strict implication exhibit significant formal differences in behavior. This can be made manifest as follows.
In the case of material implication, which refers to *inactualities* of truth, the hypothetical "if P then Q" means "(P and not Q) *are not* both true". Here, the reverse is also valid; i.e. "The conjunction of P and not Q is not true" formally implies "P (materially) implies Q".
In the case of strict implication, which refers to *impossibilities* of truth, the hypothetical "if P then Q" means "(P and not Q) *cannot be* true together". Here too, the reverse is also valid; i.e. "The conjunction of P and not Q cannot be true" formally implies "P (strictly) implies Q".
The relations involved are parallel. However, when we mix the two categories of modality, the result is significantly different. Since impossibility implies inactuality, but inactuality does not imply impossibility, it follows that "P and not Q are incompatible" implies but is not implied by "P and not Q are not jointly true".
Thus, whereas in material implication "if P then Q" is fully equivalent to "(P and not Q) are not both true", i.e. these two forms mutually imply each other – in the case of strict implication, "if P then Q" implies *but is not implied by* "(P and not Q) are not both true", i.e. the implication between these two forms is unidirectional. Knowing actual negation of conjunction does not justify assuming strict implication. [5]
It should be added that these reflections provide us with an unbeatable argument in favor of strict implication, against the advocates of material implication. If we ask: what is the "formal implication" or "implication between forms" that we refer to in this very discussion (and indeed in all discussions of formal logic - or of mathematics, for that matter)? Is it material or strict? The answer has to be: strict implication.
When we say: "(P materially implies Q) implies and is implied by (P and not-Q are not both true)", the implications between the bracketed items are strict implications, even though the implication within the first item is material. *Formal implication is logical necessity*; i.e. it is applicable under all possible conditions, whatever the content of the forms involved. Therefore, strict implication is more important to logic than material implication.
Does material implication then have any place in natural discourse, or is it artificial? I believe it still does have a place, due to the fact that all implication is denial of conjunction. When we know that, say, "P and not-Q are not

[5] This is why I insisted, in the original version of *Future Logic* (chapter 24.3), that the truth-table relative to implication is only an effect, not a cause.

both true", we may indeed *turn it around in our minds*, thinking "well, that means if P is true, Q is not false, etc." This shows that material implication is useful to the understanding, helping us *mull over* certain indefinite statements.

Note well, then, strict implication is essential to logic, and cannot be ignored or discarded in favor of material implication, as some logicians (and mathematicians) think, even though the latter has some utility.

Additionally, an oft-ignored advantage of strict over material implication is the negative form it provides us. If we understand "if P, then Q" in the strict sense, then its contradictory is the negative form "if P, *not-then* Q" (or "If P, it does not follow that Q"), meaning: "(P and not-Q) is a *possible* conjunction"; whereas, in the material sense, its contradictory would simply be the actual conjunction "P and not-Q".

Clearly, the negation of strict implication gives discourse an important formal tool. We can, for instance, use it to point out the common fallacy of confusing a non-sequitur demonstration with a disproof. If we show that a conclusion does not follow from certain premises ("if P, not-then Q"), it does not mean we have disproved the conclusion ("if P, then not Q").

With regard to logic history, I would like to here correct a suggestion I made in [the original version of] *Future Logic*, that the Megarian Philo's view of implication may have not corresponded to our modern concept of material implication. The following quotation from the *Encyclopaedia Britannica* (2004) convinced me:

> "Diodorus also proposed an interpretation of conditional propositions. He held that the proposition "If p, then q" is true if and only if it neither is nor ever was possible for the antecedent p to be true and the consequent q to be false simultaneously. Given Diodorus' notion of possibility, this means that a true conditional is one that at no time (past, present, or future) has a true antecedent and a false consequent. Thus, for Diodorus a conditional does not change its truth value; if it is ever true, it is always true. But Philo of Megara had a different interpretation. For him, a conditional is true if and only if it does not now have a true antecedent and a false consequent. This is exactly the modern notion of material implication. In Philo's view, unlike Diodorus', conditionals may change their truth value over time."

Following this reading, we can safely assert that strict implication was first elucidated by Diodorus Cronus (also a Megarian, d. *circa* 307 BCE)[6]. Note that Philo was a student of Diodorus.

One last note on this: material implication is a logical (i.e. "de dicta") relation – and is not to be confused with any of the "de re" types of conditioning, i.e. with natural, temporal, extensional or personal conditionals. Some logicians are led into this confusion by the name "material" implication and its implied contrast to "formal" implication. But the truth is that so-called material implication is a subcategory of logical relations, just one that is weaker than strict implication.

9. Nesting of Hypotheticals

Concerning nesting of hypothetical propositions: the nested form "if p then (if q then r)" may be considered as equivalent to (implying and being implied by) the form with a compound antecedent "if (p and q) then r"[7]. From which it follows that it also means: "if q then (if p then r)". And since the nested clause can be contraposed to "if p then (if not r then not q)", we can further educe: "if (p and not r) then not q" and "if not r then (if p then not q). Or again: "if q then (if not r then not p)"; whence: "if (q and not r) then not p" and "if not r then (if q then not p)".

No matter which of these forms we choose to use in our discourse, they all mean the same thing, namely "(p + q + not r) is an impossible conjunction", all seven other combinations of p, q, r, and/or their negations, being left open, i.e. remaining logically possible in the stated context. This is the underlying 'matrix' of meaning, which remains constant for the form concerned, however complicated the way we express it. If in a given context,

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[6] For comparison, Aristotle died 322 BCE.

[7] The first form means "p and (q and not r) is impossible"; the bracketed conjunction of q and not r is impossible in the context of p, which is the same as "the conjunction of all three items is impossible". The second form means "(p and q) and not r" is impossible, which is equivalent to "(p + q + not r) is an impossible conjunction".

additional forms are specified as true, one or more of these combinations left open is declared impossible, and the range of logical possibilities becomes narrower.

The laws of thought teach us that there are only eight ways p, q, r, and/or their negations, can combine together. They cannot all be false: one of them must be true; no ninth way is ever logically possible (law of the excluded middle). Furthermore, if one of these combinations is true, all seven others are false; i.e. no more than one of them can be true in any given case or context (law of non-contradiction).

Conjunctions as such are compound categorical propositions. Hypothetical (if-then) propositions, on the other hand, are defined by general[8] negations of such conjunctions. Whereas (positive) conjunctions are directly about the truth or falsehood of the combined propositions, the general negations of conjunctions (i.e. hypotheticals) are about the logical impossibility of specified combinations – i.e. they determine truth and falsehood more vaguely.

When we say that a conjunction of propositions is logically "possible", we mean that, as far as we know, or can logically predict in the given context of knowledge – that conjunction may yet turn out to be true, i.e. that form may well be realized in the case concerned. A combination is logical "impossible", on the other hand, if no matter what its content or eventual changes in our knowledge context, we can predict with certainty that it will never be found true.

If all eight conjunctions (of our three items) are still possible, it is as if nothing has been said (since this is logically given universally). We begin to say something significant, when we narrow down the possibilities by declaring (for whatever reasons) one or more of the conjunctions impossible. The more combinations are negated, the more specific our statement. If it turns out eventually that seven conjunctions have thus been eliminated (for various reasons), the leftover conjunction has got to be "true". Of course, this implied truth is contextual, i.e. it remains dependent on the correctness of all experience and reasoning that led up to it; but granting the latter, it is true.[9]

10. Compound Theses

The logic of hypotheticals with compound theses. Nesting may be viewed as anticipation of the consequences of gradual realization of a compound antecedent. This gives us, for an antecedent compounding two propositions:

- "(p and q) implies r" implies and is implied by "p implies (q implies r)".

The same can be done, by successive application of the preceding argument, with compounds involving any number of elements (as with the example with three below):

- "(p and q and r and…) implies s" implies and is implied by "p implies (q implies (r implies… s))".

Having considered the logic of conjunctions in the antecedent of hypotheticals, let us, in passing, also mention the corresponding logic for their consequents. Note specifically the following useful arguments, which are easy to validate (by referring to the underlying conjunctions, as usual):

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[8] I say "*general* negations" to stress that we are here dealing with strict implication. We do not just deny the actual truth of a combination, but its logical possibility ever. In this framework, the negation of an "if – then" form is not a conjunction, but an "if – not-then – " form.

[9] It is interesting to analyze the specific case of nesting: "if p then (if p then q)". Clearly, it is equivalent to "if (p + p) then q", which just means "if p then q" or "(p + not-q) is impossible". An Internet correspondent, David Brittan, asked me the question: how to interpret such a form when its consequent is contraposed: "if p then (if not-q then not-p)"? This eduction would seem to suggest the possibility of contradiction – i.e. the coexistence of p and not-p, at least in the context of not-q, which might be taken to imply that not-q is impossible!

But the answer is simply: if we rewrite it as "if (p + not-q) then not-p", it becomes clear that this form is not per se illogical – it is merely paradoxical, telling us that "if not-q then (if p then not-p)". The consequent of this hypothetical proposition, viz. "if p then not-p", is logically quite viable; it just implies "not-p" categorically. Thus, the overall conclusion is still "if not-q then not-p" (which is merely the contraposite of our initial conclusion "if p then q"). Note well that the inference is *not* "if not-q then (p and not-p)" – if that had been the case, then indeed "not-q" would have been logically impossible (as my correspondent feared).

- "p implies q" implies and is implied by "p implies (p and q)"[10]. This may be labeled 'adding the antecedent to the consequent', or in the reverse direction 'subtracting it'.
- "p implies q" and "p implies r" together imply and are implied by "p implies (q and r)". This may be labeled 'adding together consequents of the same antecedent', and in the reverse direction 'splitting them apart'.

These arguments may be compounded with the following hypothetical syllogism:

- "p implies q" and "q implies r" together imply (though are not implied by) "p implies r"

… to yield the following two derivative arguments:

- "p implies q" and "q implies r" together imply (though are not implied by) "p implies (q and r)".
- "p implies q" and "q implies r" together imply (though are not implied by) "p implies (p and q and r)".

The above mentioned process of 'adding together consequents of the same antecedent' may be viewed as a special case of the following process, of 'merging hypotheticals', i.e. compounding both their antecedents and their consequents:

- "p implies r" and "q implies s" together imply (though are not implied by) "(p + q) implies (r + s)".

This process would seem valid *only on the proviso that p and q are compatible*, granting that if the antecedents are not compatible, they couldn't occur in conjunction, and so the shown conclusion would not be possible. Or perhaps we should without fear say it is valid unconditionally, since the conclusion does not in fact affirm the antecedent (p + q), and denial of that antecedent would not logically imply (r + s) to be impossible.

The reverse process of 'splitting' is anyway not conditional, but it concerns only the consequent, *not the antecedent*, note well:

- "(p + q) implies (r + s)" implies "(p + q) implies r" and "(p + q) implies s", and is implied by them together.

Note well: we cannot here reverse the previous merger, and conclude "p implies r" and "q implies s". This would be an 'illicit splitting of the antecedent'. Beware also, therefore, of the following common *fallacious* argument (which could be classed as an apodosis):

> If (p + q), then (r + s)
> but: if p, then r
> therefore: if q, then s.

The erroneous tendency here is to mentally 'subduct'[11] both p and r, leaving q and s. But if we first split the major premise into two, we see that the minor premise eliminates one hypothetical, leaving us with the conclusion "if (p + q), then s", or in nested form "if p, then (if q, then s)". Note well, the latter, correct conclusion is in fact an eduction from the major: we have no need of the minor to infer it. Notice too, the precondition "if p" remains operative in it, until and unless "p" is categorically affirmed; and even then, "if q, then s" should be kept in mind as a mere contextual truth, since strictly speaking there are no 'actual hypotheticals'. If the "if q, then s" conclusion does sometimes seem true in practice, it is no doubt because we tacitly regard the precondition "p" as already satisfied in the case at hand.[12]

Finally, note: it might be worthwhile looking for similar processes with respect to disjunctive propositions.

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[10] One might add: since "p implies p", but that premise being universally true need not be mentioned. Note also that if the theses p, q are not synchronous in the premise, they are of course not synchronous in the consequent of the conclusion. This is important when dealing with natural conditioning: it would be fallacious to ignore the original temporal difference (if any) and regard the theses in the conjunction "p and q" as simultaneous. Similarly in other cases, needless to say.

[11] I take this term from J. S. Mill's method of residues (see the 2005 revised version of my essay on his methods – in Part II, chapter 1).

[12] Note that I mention this form of argument, as being common in rabbinic reasoning, in *Judaic Logic*, chapter 9.1 (p. 116). Of course, the conclusion I give there is only valid provided the antecedent's conjuncts left out in it are tacitly considered categorically true.

The logic of nesting and compound theses is considered as having been founded by the Stoic logician, Chrysippus of Soli (Greek, 280-206 BCE).[13]

11. Validation of Nesting

Let us look a bit more in detail at the issue of validation in the logic of nesting.

We may refer to the eduction from "if (p and q) then r" to "if p then (if q then r)" as the production of a nest (or nesting); and to the reverse immediate inference from "if p then (if q then r)" to "if (p and q) then r" as the removal of a nest (or 'unnesting'). How are these two processes validated? For a start, they make sense from a common sense viewpoint….

Nesting can be understood as follows. Knowing that a set of conditions (p and q) implies a certain conclusion (r), and knowing that some of these conditions (p) are already satisfied, we can predict that when the remaining conditions (q) are also satisfied, the conclusion (r) will indeed follow[14]. The reverse process of 'unnesting' can be understood as follows. Knowing that under a certain condition (p) a further condition (q) implies a certain conclusion (r), we can predict that when both conditions (p and q) are satisfied, the conclusion (r) will indeed follow.

On these grounds (exposition), it is reasonable to consider the forms "if p then (if q then r)" and "if (p and q) then r" as equivalent, i.e. that each implies and is implied by the other. We may also argue that both forms have the same underlying meaning, namely that "the conjunction of p, q and not r is an impossible one".

However, if we analyze matters more precisely some doubt might be justified….

The form with a compound antecedent means "(p and q) and not r" is impossible, i.e. the bracketed conjunction of p and q is impossible in the context of not r, which is clearly equivalent to "(p + q + not r) is an impossible conjunction"; whereas the nested form means "p and 'not (if q then r)*'* is impossible", which means "the conjunction of 'p' with '(q and not r) is not impossible' is impossible". The latter form is less clear, because it could apparently be interpreted in two ways: either as meaning that "p" is incompatible with *the possibility of* "q and not r"; or as meaning that "p" is incompatible with *the actualization of* the latter possibility (viz. when "q" and "not r" are both true).

We know from tropology (the theory of modality) that the necessary implies (but is not implied by) the actual, which in turn implies (but is not implied by) the possible; and similarly the impossible implies (but is not implied by) the inactual, which in turn implies (but is not implied by) the unnecessary. On such grounds, it could be objected that these interpretations are not equivalent.

However, one could reply that "p is incompatible with the possibility of (q and not r)" at least *implies* "p is incompatible with the "actuality of (q and not r)", though the reverse may not hold. In that case, the nested form would be admitted to at least imply (though perhaps not be implied by) the unnested form; i.e. unnesting would be validated, but not nesting.

But I would be inclined to dismiss such objection altogether, and insist that "p is incompatible with the possibility of (q and not r)" is only superficially about conjunction with a possibility and ultimately is only concerned with conjunction of actuals (i.e. p, q and not r). In this view, the meaning of hypothetical propositions, however

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13 As I mention in *Future Logic*, chapter 63.2. But I do not know on what evidence this claim is based. How many of the theorems here listed were known to him, or to anyone since, I also do not know.

14 It might be objected: but what if (as occurs in some cases) the first conditions (p) are sufficient without the others (q) to imply the conclusion (r); i.e. what if q is *redundant*? This refers to a situation where "if (p and q) then r" and "if p then r" are both true, and the question asked is: is the inference "if p then (if q then r)" still valid? The answer would be: yes, in such a situation, in the context of "p", both "r" and "if q then r" would follow, and these two propositions are quite compatible; if "q" also happened to be true, then "if q then r" would simply reconfirm "r". Indeed, given "if p then r" and that "(p and q) is possible", it follows that "if (p and q) then r", because the given is that "p implies r under all conditions"; note well however that "p" and "q" must be known to be compatible, before making such an inference.

intricately constructed, is always the impossibility of one or more of the underlying actual conjunctions and the leftover possibility of at least one such actual conjunction[15].

Admittedly, some flavor of doubt remains, and some people will surely subscribe to the dissident view. But it occurs to me that we do have a reliable technical means to settle the issue once and for all – viz. the advanced methods of matricial analysis I have developed in phase II of *The Logic of Causation* (microanalysis). I shall have to eventually look into this matter in that context (and might conceivably find that my intuitive assumptions here are simplistic).

Note these techniques will also make possible the clear interpretation of intricate forms involving *negative* hypotheticals – such as "if (p and q) *not-then* r", or such as "if p then (if q *not-then* r)"[16]. The mental acrobatics involved in the comprehension of such forms are daunting, and there is an obvious need for more objective and mechanical methodology. I look forward to developing software for this purpose.

12. Brackets in Logic

In my past treatment of logical compositions[17], I did not fully deal with the issue of whether brackets in logic transmit polarity as they do in mathematics. The answer to that question is: not always – i.e. the analogy between symbolic logic and algebra should not be pushed too far or blindly applied.

Our analogy begins by labeling the affirmation of a thesis as positive polarity, and its negation as negative polarity. Thus, "P" may be written "+ P" and "not P" must be written "– P". Then we ask whether "– (– P)" equals "+ P"? The answer is yes, this mathematical formula applies, since "not (not P)" means the same as "P".

The brackets seem to also transmit polarity in the following case:

"– (P v Q)" = "– P – Q"

since "not (P or Q)" means "not (not (not-P and notQ)", whence "not-P and not-Q". This suggests further analogy between logic and mathematics, albeit in somewhat forced fashion.

However, the analogy breaks down entirely in view of the following invalid case:

"– (P – Q)" = "– P + Q"

This process would be fallacious, since "not (P and not-Q)" is not logically equivalent to "not-P and Q", but also allows for the alternatives "P and Q" and "P and not-Q".

Thus, we should avoid attempting to make parallels between logic and mathematics; it is artificial and misleading.[18]

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[15] In this view, the 'matrix' of any form refers to all logically possible combinations of the items concerned (in the case of three items – as here – there are 2*2*2 = 8 formally conceivable combinations), labeling some as 'impossible' and leaving the others as 'possible'. The mode of modality intended by the word possibility here may admittedly vary slightly: sometimes it means 'formal logical possibility', in other cases it means 'possibility by virtue of ignorance'; but such distinction is academic, the effect on discourse being the same.

[16] I would also like to investigate conjunctions of hypotheticals. For instance, what is the conclusion given the two premises: "if p then (if q then r)" and "if not p then not (if q then r)" ?

[17] *Future Logic*, chapter 28.

[18] Note also, in passing: a logical disjunction is sometimes in the sciences replaced by an average. For instance, if we know the value of some physical variable is "either 0 or 1", we may suppose, granting equal probabilities for both outcomes, that on average its value is ½. Such reasoning is partly logical and partly mathematical. The logical part is the (presumably exclusive and exhaustive) disjunction, and the awareness that one of the disjuncts will ultimately turn out to be true and the other(s) false; logic also admits of the existence of probabilities, ranging from 100% on one side or the other, or somewhere in between. However, the task of *calculating* probability belongs to mathematics. Additionally, by the way, physical science is involved here: in gathering the relevant empirical data, and also (at least in quantum mechanics) in the discussion as to whether the probabilities are factual or epistemic.

5. About Paradoxes

1. On the Liar Paradox

Once we grasp that the meaning of words is their intention, singly and collectively – the solution of the liar paradox becomes very obvious. Self-reference is meaningless, because – an intention cannot intend itself, for it does not yet exist; an intention can only intend something that already exists, e.g. another intention directed at some third thing.

In view of this, the proposition "this proposition is false" is meaningless, and so is the proposition "this proposition is true". Both may freely be declared equally true and false, or neither true nor false – it makes no difference in their case, because the words "this proposition" refer to nothing at all[1].

Although the words used in these sentences are separately meaningful, and the grammatical structure of the sentences is legitimate – the words' collective lack of content implies their collective logical value to be nil. Self-reference is syntactically cogent, but semantically incoherent. It is like circular argument, up in the air, leading nowhere specific.

Regarding the exclusive proposition "*Only* this proposition is true", it implies both: "*This* proposition is true" and "*All other* propositions are false" – i.e. it is equivalent to the exceptive proposition "*All* propositions *but this* one are false". The latter is often claimed by some philosophers; e.g. by those who say "all is illusion (except this fact)".

My point here is that such statements do not only involve the fallacy of self-reference (i.e. "this proposition"). Such statements additionally involve a reference to "all others" which is open to criticism, because:

- To claim knowledge of "all other propositions" is a claim to *omniscience*, a pretense that one knows everything there is to know, or ever will be. And generally, such statements are made without giving a credible justification, though in contradiction to all prior findings of experience and reason.
- Surely, *some* other propositions are in fact regarded and admitted as true by such philosophers. They are generally rather talkative, even verbose – they do not consistently *only* say that one statement and refuse to say anything else.
- And of course, formally, if "this" is meaningless (as previously shown), then "all others", which means "any other *than this*" is also meaningless!

The liar paradox, by the way, is attributed to the ancient Greeks, either Eubulides of Miletus (4th Cent. BCE) or the earlier Epimenides of Crete (6th Cent. BCE). I do not know if its resolution was evident to these early logicians, but a (European?) 14th Cent. CE anonymous text reportedly explained that the Liar's statement is neither true nor false but simply meaningless. Thus, this explanation is historically much earlier than modern logic (Russell et alia, though these late logicians certainly clarified the matter).[2]

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1 See *Future Logic*, chapter 32.2.

2 See *Future Logic*, chapter 63, sections 3 and 6.

2. Making No Claim

The Buddhist[3] philosopher Nagarjuna (India, *c*. 150-250 CE) attacked every thesis he regarded as rational by every means he regarded as logical, and declared his own discourse immune from scrutiny and criticism, by saying (according to one translation):

"If I had a thesis, I would be at fault; since I alone have no thesis, I alone am without fault" (VV 29)[4].

The first aspect of Nagarjuna's statement is a brazen **claim to have no claim.** This is of course self-contradictory. Every proposition that claims to be meaningful and true (whether about some experience or about abstraction, whether positive or negative) is an assertion, a claim. To pretend making no claim even as one plainly makes one is a breach of the law of identity: it is denying that a fact is a fact.

There is no logical way to deny or criticize the theses or methodologies of others without opening one's own discourse to evaluation. All denial or criticism is discourse, and all discourse is subject to logical review. To pretend the logical possibility of dispensation is dishonest (and if such pretense implicitly is bad enough, it is all the more dishonest if made explicitly).

Nagarjuna's discourse was, in fact (as I show in *Buddhist Illogic*), shock full of fallacious arguments, a mere parody of logic posing as logic. But he knew that people untrained in logic would fall for it, and he sealed their intellectual fate with the said eyewash claim. To neutralize further discussion, he misled them into believing he had simply shown up the logical absurdity of logic, and all doctrines based on it, but had himself posited no methodology or doctrine of his own.

Not only was his alleged refutation of reason full of errors of reasoning, but his concluding 'no-claim claim' was also a mockery of logic and sincerity. He, of course, just says 'I make no claim' – and he persistently denies that this statement constitutes a claim. I call that shameless psychological manipulation, motivated by one-upmanship. He cynically takes advantage of the credulity of some people, to dominate them intellectually.

The second aspect of Nagarjuna's above statement can be viewed as a 'soft' version of the liar paradox, since he tells us: **everyone but me is in error**. Although such a statement is not in itself inconsistent (God could conceivably utter it truthfully) – it is logically open to doubt due to being *self-exempting*.

Effectively, it says: 'I am the only human who has knowledge; I know everyone else is incapable of true knowledge'. Only a fool is tricked by such an unsubstantiated claim to privilege. Reason regards all people as technically within range of knowledge given enough effort, even if they do not all fulfill their potential equally. Reason demands that discourse be reasoned and fair – i.e. based on *common general norms* as to how truth and falsehood are to be determined.

If Nagarjuna were basing his criticism of ordinary human means to knowledge on a claim to have attained a *'higher level' of consciousness* (i.e. Buddhist enlightenment or Biblical prophesy), we could not convincingly oppose him (being unable to prove or disprove such experiential claims). But he is not using such as claim as his basis – he is attempting to debunk reason through *ordinary* logical discourse. In that case, he is fair game for logic.

The statement of infallibility is then seen as manifest arrogance, a lack of respect for other thinkers. By saying 'I alone am exempt from any criticism' the author aggressively grants himself a special dispensation: he alone is endowed with the way to knowledge; everyone else is an idiot or a dishonest person. It is totalitarian, dictatorial speech.

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[3] Needless to say the following comments are not an attack on Buddhism, but on the rhetoric of Nagarjuna. Buddhism is not well served by such games. I think of Nagarjuna whenever I read v. 306 of the *Dhammapada*: "He who says what is not… and he who says he has not done what he knows well he has done… sinned against truth". For me, he is just a philosopher like any other; his interest in Buddhism is incidental (as is his saintly status in the eyes of many).

[4] Nagarjuna in *Vigraha Vyavartani* (*Averting the Arguments*), verse 29. The translation used here is given by 'Namdrol' in the E-Sangha Buddhism Forum (http://www.lioncity.net/buddhism/index.php?s=d8946a5bcb1f56f3e9e21a108125823f&showtopic=5604&st=100&#entry82577). Note however that the word "alone" in this translation may not be in the original, judging by other translations I have seen, even though it does seem to be Nagarjuna's intent.

Compare this dismissive 'you all know nothing', to the self-inclusive statement 'I (or we) know nothing'. The latter – even though it implies 'I know that I know nothing' and is therefore self-inconsistent – is at least modest; so much so, that such admission is widely considered a mark of wisdom (and it is commendable, in modified form, i.e. as 'I know *close to* nothing, very little').

Self-exemption is a hidden form of self-inconsistency, because it resorts to *a double standard*. The one making such a claim presents superficially rational arguments against human experience and logic, but does not ask himself or tell us how he (an ordinary human) managed (using the very cognitive means he rejects) to attain such allegedly true knowledge. The author criticizes others, but does not equally well criticize himself.

This is a fallacious mode of thought often found among would-be skeptical philosophers. It comes in many subtle forms. It is wise to always be on the lookout for such practices, applying the reflexive test here demonstrated.

3. Nagarjuna's Trickery

Looking at Nagarjuna's above statement in more detail, the following may be added.

To begin with, what is meant here by "***having a thesis***"? This refers to any explicit or even wordless belief, any clear or even vague opinion upheld (considered to constitute knowledge), any proposition one advocates or implicitly logically condones. The subject that Nagarjuna is here discussing is any outcome of human rational cognition, any belief, opinion or doctrine that one may arrive at, rightly or wrongly, by means of ordinary consciousness, i.e. through experience, negation, abstraction, hypothesizing, inductive or deductive argument.

And what is meant here by "*being at fault*"? This refers to making a mistake in the course of observation or reasoning, so that some thesis one has adhered to is in fact an illusion rather than a reality, false rather than true, erroneous instead of correct.

How do we know the status appropriate to a thesis? We know it (I suggest) *by holistic application of the whole science of logic to the totality of the data of experience*. Our concepts of cognitive right or wrong are themselves all constructed by logic and experience, without appeal to some extraordinary outside justification (like prophetic revelation or mystical realization, or simply the authority of some great personage or of a religious document or institution).

Now, Nagarjuna is evidently well aware of all that, but is intent on annulling the independent reliability of ordinary experience and reason. His strategy and tactics to this end, in all his discourse, as I have shown throughout my *Buddhist Illogic*, is to give the impression (however paradoxical) that logic may be invalidated by means of logic. And this twofold sentence of his, "If I had a thesis, I would be at fault; since I alone have no thesis, I alone am without fault", fits neatly into his destructive philosophical programme.

On the surface, this sentence might be construed as a single argument:

> If X (a proposition is proposed), then Y (an error is made)
> but not X (no proposition)
> therefore not Y (no error)

Although the above apodosis is logically invalid, since it denies the antecedent to deny the consequent, Nagarjuna is not above letting it pass without comment, knowing it will suffice to convince some people, although he is well aware that the logically trained will spot it and object. But for the latter audience, he reserves a more subtle form of manipulation.

It has to be seen that the purpose of this famous Verse 29 in Nagarjuna's discourse is designed *to make a show of logical consistency*. He wants by means of it to give the impression that his anti-rational discourse is justifiable, that it has the stamp of approval of logic. Yes, he is actually attacking logic; but at the same time, he has to pretend to use it, because he knows this measure is required to convince people. For most people, a veneer of logic (i.e. mere rhetoric) suffices to put their reason's critical faculty at rest. We shall now see how he goes about this task.

The first part of Nagarjuna's statement, viz. "If I had a thesis, I would be at fault", is not intended (as some have assumed) as a justification for his overall discourse. It is not placed here in his discourse as an argument with

intrinsic force, which directly buttresses or proves his philosophy. It is certainly not an obvious logical principle, or axiom, which everyone would agree on without objection, from which his discourse can be inferred or even generalized. No – it is itself an inference and application from Nagarjuna's main thesis, namely the claim that 'All human knowledge based on ordinary experience and reason is necessarily erroneous'.

The latter underlying claim is his major premise in a (here tacit) productive eduction, i.e. one that deduces a particular hypothetical proposition from a more general categorical one[5]. This argument is formally valid, running as follows:

> All X (opinions) are necessarily Y (erroneous);
> therefore,
> If this is X (a proposition is proposed), then this is Y (an error is made).

In this way, the first part of Nagarjuna's statement is made to seem something inferred, rather than an arbitrary claim. It is cunningly presented as an application of already admitted information, rather than as an isolated assertion. Granting the premise, the conclusion indeed logically follows (this is the veneer of logic) – but has the premise already been granted? No. Also note, once the conclusion is seemingly drawn, it can by generalization be used to reinforce the premise; although this is a circularity, it works psychologically.

Moreover, Nagarjuna manages through this implicit productive argument to pretend he is being consistent with himself: he is telling us, effectively: 'See, I am not just attacking other people's knowledge, but am prepared to apply the same stringent critique to my own!' This virtuous declaration is of course dust in your eyes, because he is not here putting the broader principle in doubt but merely reaffirming it. He has nowhere established that 'All propositions are false'. His is a pseudo-logical posture.

As the next part of his statement clarifies, he does not consider his discourse as falling under the critical rule he has formulated. The proposition "If I had a thesis, I would be at fault" is a counterfactual hypothetical; his own discourse is never made into an issue open to debate. It seems open-minded, but it is a foregone judgment. His intention is to 'avert all arguments' and place himself at the outset outside the fray. He seemingly at first admits and then vehemently denies that his own discourse is a product of ordinary consciousness. This convoluted avoidance of cognitive responsibility has fooled many a poor soul.

Moving on, now, to the second part of Nagarjuna's statement, viz. "since I alone have no thesis, I alone am without fault". As already pointed out, this can be viewed as the minor premise and conclusion of an invalid apodosis in which the first part of the statement is the major premise. But we could also more generously assume that Nagarjuna intended a valid apodosis, using as its tacit major premise the obvious proposition: 'If one has no thesis, one cannot make a mistake'.

It can be correctly argued that this premise was left tacit simply because it is so obvious to and readily granted by everyone. It is indeed true that if one ventures no utterance, thought or even intention, if one holds no opinion, makes no claim to knowledge, if one remains inwardly and outwardly silent, one will never make any errors. *For the status of truth or falsehood is only applicable to meaningful assertions.*

A stone is never in error, because it has no thoughts. Likewise, a thoughtless person may by his or her ignorance, blindness or stupidity make many errors of living, but makes no error in the logical sense of having proposed an inappropriate proposition. All that is so obvious (and vacuous) no debating it is necessary. The following apodosis is thus implicit in Nagarjuna's declaration:

> If not X (no proposition is proposed), then Y (no error is made)
> but not X (no proposition)
> therefore not Y (no error)

This argument has a true major premise, as well as a valid form. This gives his discourse a veneer of logic again, helping him to persuade more victims. However, his minor premise remains well open to doubt, and decisively

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[5] See *Future Logic*, chapter 29.3.

deniable! (As a consequence of which, his conclusion is of course also open to doubt.) He takes it for granted that he 'has no thesis' – but this claim is far from granted already. The tacit major premise acts as a smokescreen for the minor premise.

Moreover, note, although 'being correct' implies 'not being at fault', the reverse is not necessary. Nagarjuna suggests that his alleged faultlessness implies the correctness of his position, but it does not follow! Only if his criticism of all opposing theses was correct (which is by no stretch of the imagination true), and his thesis was not liable to similar criticism and was therefore the only leftover logical possibility, would such inference be drawn.

Nagarjuna does indeed 'have a thesis'. His main thesis, the goal of his whole philosophical discourse, is as already mentioned the claim that 'All human knowledge based on ordinary experience and reason is necessarily erroneous'. This, for a start, qualifies as a thesis – boy, it is a big skeptical thesis, full of negative implications. It is a principle of logic that *to deny any thesis is to affirm an opposite thesis.* His claim that his doctrine is not a thesis, in the minor premise here, is mere arbitrary assertion.

Furthermore, he 'has a thesis' every time he makes a specific assertion of any kind, including the assertion under scrutiny here, viz. "If I had a thesis, I would be at fault; since I alone have no thesis, I alone am without fault". Note that Nagarjuna thinks that making a negative statement is somehow 'not having a thesis' – but the polarity of a statement does not diminish the need for justification; if anything, one can argue that on the contrary negative statements are harder to establish than positive ones!

And we should strictly include as 'theses' of his not only such explicit statements, but also all the implicit assumptions and suggestions within his discourse (like the implicit major premise and resulting apodosis we have just highlighted). It makes no difference whether these explicit, or unstated and unadmitted, items constitute information or logical method, content or process.

For all these elements of discourse, be they spoken or otherwise intended, in all fairness fit in our common understanding and definition as to what it means to 'have a thesis'. For none of these categorical or hypothetical propositions (except perhaps 'if silence, no error') is self-evident. They did not arise *ex nihilo* in Nagarjuna's mind, ready-made and self-justified.

They are all complex products of ordinary human cognition, based on experience and produced by reason (even if, in Nagarjuna's case, the mind involved is deranged). They undeniably together form a specific philosophy, a theory of logic, an epistemology and ontology. The mere fact that we can (as here done) at all consider and debate them is proof that they are 'theses'.

The law of identity (A is A) must be maintained: facts are facts and it is no use pretending otherwise. Nagarjuna may eternally refuse the predicate of "having a thesis", but we confidently insist on it. His arguments have in no way succeeded in averting this just and true judgment. Consequently, his doctrine is self-contradictory. Not only does he 'have a thesis', but since his thesis is that 'to have a thesis is to be in error', he has (by its own terms) to be recognized as being in error.

Thus, to end it: Nagarjuna's statement "If I had a thesis, I would be at fault; since I alone have no thesis, I alone am without fault" weaves a complicated web of deception. It misleads, by means of subtle ambiguities and superficial imitations of logic. Once its dishonesty is revealed, it should be decidedly rejected.

The mere historic fact that Nagarjuna is famous and admired by many does not justify hanging on to his doctrine *ad nauseam*, trying ex post facto to find ways to make it consistent with logic. Celebrity is not proof of some hidden truth – it is vanity. Most who do so are merely grasping for reflected glory. Anyway, attachment to authority is argument *ad hominem*. The religious and academic 'groupies' who gave him and perpetuate his authority are not logically competent, however numerous they be. It is a case of the blind leading the blind.

4. Non-apprehension of Non-things

Nagarjuna defends his 'non-thesis' idea in the next verse (VV 30), describing it as "***a non-apprehension of non-things***" (according to one translation[6]). Now, this is a very funny phrase. To the impressionable, it sounds very deep, pregnant with meaning. It seems to suggest this man has some privileged higher way of knowledge that goes beyond ordinary experience and reasoning.

But in truth, taken literally, we are all quite capable of "non-apprehension of non-things" and daily practice it, for the simple reason that non-things cannot be apprehended! Logically, this is all this phrase means, note well. What then is the old fox up to, here?

Nagarjuna is trying to project his 'not having a thesis' position as far as logically possible from our plebian 'having a thesis' – i.e. from ordinary consciousness, which consists in 'the apprehension of things'. He has logically only three alternatives to choose from:

- the 'non-apprehension of things' (unconsciousness);
- the 'apprehension of non-things' (an otherworldly consciousness);
- or the 'non-apprehension of non-things'.

Having a marked taste for one-upmanship and dramatic extremes, Nagarjuna of course chose the third of these terms as his vehicle. Even though the obvious sense of this phrase is puerile, it has poetic breadth and appeal. It seems to imply 'knowledge without consciousness' and 'consciousness of the unknowable' all at once.

Thus, his 'non-apprehension' is a mix of apprehension and non-apprehension, or something else again. And likewise, his 'non-things' are things of some sort as well as non-things, or perhaps something quite other still.

In other words, the negative terms in the phrase "non-apprehension of non-things" are not intended by Nagarjuna nor received by his disciples and students as mere negations of the corresponding positive terms, but as **paradoxical terms**, which may (in accord with the tetralemma schema) be all at once *positive or negative or both or neither*.

It is (and isn't) 'apprehension/non-apprehension of things/non-things' all in one.

Nagarjuna stands out in the history of world philosophy as the most unabashed opponent of the laws of thought. Not only does he freely use self-contradictory or middle-including propositions, but he even makes use of terms loaded with contradiction and inclusion of a middle.

Now, some people might say: 'what is wrong with that?' They will argue: 'the real world is extremely subtle and we can only ever hope to express it in thought very approximately; Nagarjuna is only trying to take this uncertainty into consideration within his discourse; the laws of thought are just arbitrary demands, making us force our thoughts into prejudicial straightjackets'.

But logical laxity is not the proper attitude in the face of an extremely complex and hard to express real world. It is precisely because of the great difficulty of the cognitive task at hand that one is called upon to be very clear and careful. Avoiding checks and balances on our judgments does not increase their efficiency but makes them less reliable.

In the case under consideration, if Nagarjuna does indeed have some privileged form of otherworldly consciousness, he can just say so. The laws of thought in no way forbid him to posit such a claim. He does not need to beat about the bush, and pretend to have something unspeakable and not subject to peer review. He can and should be forthright, and defend his position in an equitable way like everyone else.

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[6] By Frederick J. Streng. The full text of his translation seems to be that posted in the Internet at: http://www.orientalia.org/article491.html. Note that the phrase "non-apprehension of non-things" is considered an incorrect translation by Plamen Gradinarov. However, while willing to admit the latter's objection, I do not agree that Streng's freer translation is entirely inadmissible. In my view, it may not be literally precise, but it captures Nagarjuna's paradoxical spirit and intent. See our discussion of this issue at http://nyaya.darsana.org/topic3.html. In any case, even if the phrase "non-apprehension of non-things" is best not relied on, the criticisms of Nagarjuna in the present section can still be proposed on other grounds.

If he considers the terms 'apprehension' and 'things' to have some intrinsic logical flaw, he can argue his case openly; he does not need to engage in allusion, suggestion and fallacious argument. Most of us thinkers are open-minded and willing to correct our errors: if these terms are flawed, we are not attached to them; we are flexible, ready to modify or replace them as logically necessary in the light of new evidence and reasoning.

But Nagarjuna is like an accused, who when forced to appear in court refuses to admit his identity, or recognize the authority of the law and the judges, or plead guilty or not guilty, or argue the defense of his case. Worse still, in utter contempt of the court, he does not even admit his refusal to be a refusal – he calls it a 'non-thesis'. Does that stop court proceedings or make the court declare him innocent? Surely not.

Nagarjuna misunderstands the nature of negation. He thinks that if one person says 'X' and another says 'not X', the onus of proof is on the first more than on the second. He considers that making a positive statement is more logically demanding than making a negative one. *He imagines in his confusion that saying 'no' is equivalent to saying nothing, i.e. to not saying anything*. Most logicians would disagree with him, and argue that any thesis put forward (even if only by insinuation) is equally in need of proof, whatever its polarity.

I would go further and say that, on the contrary, a negative statement is more demanding than a positive one. You can prove a positive statement easily enough, if you point to sufficient evidence in its favor. But how do you prove a negative statement? It is much more difficult, since negatives are not directly experienced but are only experienced by way of the absence of positives. A negative can ultimately only be proved indirectly, by inability to prove any contrary positive.

Thus, in fact, not only does Nagarjuna's alleged self-limitation to negatives not exempt him from proofs, but on the contrary it increases the logical burden upon him. He is right in considering negatives as significantly different from positives, but he does not realize that the difference is to his disadvantage. He claims to have no epistemological or ontological basis, and yet to be able to reject offhand all theories of knowledge and reality. Such a grandiose fanciful claim surely requires much more justification than any other!

It should be stressed, incidentally, that Nagarjuna's "non-apprehension of non-things" should not be interpreted (as some do) as a defense of non-verbal meditative experience or insight. That is not the thrust of his anti-rational philosophy, although its avowed Buddhist affiliation may lead one to suppose so.

If Nagarjuna were a man deeply absorbed in meditation, he would not be writing philosophy. If his intent were to promote meditation, he would simply teach methods of meditation and not stir up verbal disputes. No – this man has philosophical ambitions. Allegedly, these are meant to put into words some of the 'reasoning' that he considered the Buddha to have gone through before attaining enlightenment. Nagarjuna assumes from the start that this 'reasoning' is necessarily anti-logical, a rejection of reason.

But we must see that this assumption is just a prejudice of his distorted mind. He was a philosophical revolutionary – one who believed that reason has to be overturned, to be transcended. But it is more credible to be evolutionary – and to consider meditation as a way for us to keep moving, beyond the limits of discursive thought, without need to deny such thought within its applicable bounds.

To advocate respect for logic is not to foment endless babble, but rather to require that any thought arising be subjected to responsible cognitive evaluation. Logic is possible entirely without words, by means of silent intentions. Even in deep meditation, some sort of 'reality check' by means of logic occurs, and this need not involve any words. It is only by this means, no doubt, that a Buddha-to-be may steer himself well clear of common illusions and insane imaginings, towards to full realization.

Contrary to Nagarjuna's belief, rationality and spirituality are not necessarily in conflict. Reason and meditation are potentially, to some extent, mutually beneficial. It is not thought as such, much less logic, but only excess of thought, particularly irrelevant chatter, which hinders meditative concentration and contemplation. A certain amount of appropriate thinking is often needed to initially position one's mind for meditation.

5. A Formal Impossibility

In fact, as I will now show, the sentence "If I had a thesis, I would be at fault"[7] is a *formal* impossibility. I earlier interpreted and symbolized it as "If X (a proposition is proposed), then Y (an error is made)", giving the antecedent and consequent two separate symbols, X and Y. But now let us consider these constituents more closely.

What does "making an error" mean here? It is not an ordinary predicate. The consequent Y does not merely refer to some error in general, but specifically to an error *in the antecedent* X. Y tells us that X *is wrong*. Therefore, Y formally implies the negation of X, i.e. notX! Granting this, Nagarjuna's sentence now reads: "**If X, then not X**", i.e. "If X is true, then X is false" – a paradoxical hypothetical proposition, whose conclusion would be the categorical "X is false" (as earlier suggested).

However, that is not the end of the matter. If we now consider the meaning of X – viz. "a proposition is proposed" – we may fairly suppose it refers to *just any proposition whatsoever*. In that case, the proposition concerned might even be the negation of X; so that we may substitute notX for X throughout the hypothesis. So doing, we obtain "If notX, then not notX", i.e. "**If not X, then X**", or in other words "If X is false, then X is true". This is also, of course, a paradoxical proposition, whose formal conclusion is "X is true".

We thus – by means of a universal reading of "having a thesis", as inclusive of "not having a thesis" – now have, not only a single paradox, but a *double paradox*! That is, our conclusion is not only that X is false, but that X is both true and false. The latter conclusion is of course contrary to the law of non-contradiction, as in the case of the liar paradox.

This means that Nagarjuna's statement is a formal impossibility: it is a contradiction in terms; it is not only false, but meaningless. It does not constitute legitimate discourse at all, let alone a tenable philosophical position or theory. The words or symbols used in it are logically not even conceivable, so it is as if he is saying nothing. He seems to be saying something intelligible, but it is an illusion.

Now, it may be objected that Y does not necessarily mean that X *is* wrong, but could merely mean that X *could be* wrong. That is, "making an error" could be taken to mean that X is uncertain rather than definitely refuted. In that case, we would have the following two hypotheses: "If X, possibly not X" and "If not X, possibly X"; or in one sentence: "Whether X or not X is proposed, the outcome is uncertain". Indeed, this more modal, ambiguous posture may well be considered as Nagarjuna's exact intent (which some have interpreted as noncommittal 'illocution').

At first sight, due to the use of vague words or of symbols, this objection may seem credible and the contradictory conclusions involved apparently dissolved. But upon reflection, there is still an underlying conflict: to affirm X, or to deny it, is contrary to a position that neither affirms nor denies X. An assertoric statement (affirming or denying X) is *incompatible with* a problematic statement (saying X may or may not be true). One cannot at once claim to *have* knowledge (of X, or of not X) and claim to *lack* it (considering the truth or falsehood issue open). This is as much a contradiction as claiming the same thing (X) true and false.

Someone unacquainted with the logic of hypothetical propositions might now object that X, or notX, is only proposed hypothetically in the antecedent, and so may well be problematic in the consequent. But this is a logically untenable objection, due to the process of addition (described in the chapter on formal logic); i.e. due to the fact that "If X, then Y" implies "If X, then (X and Y)". In the present case, this means: "If X is asserted, then X is both asserted and uncertain". It suffices for the contradiction to occur conditionally, as here, for the condition to be disproved; therefore, our conclusion *is quite formal*: "X cannot be asserted". QED.

Someone could here, finally, object that the certainty in the antecedent and the uncertainty in the consequent may not be simultaneous, and so not produce a logical conflict. Such objection would be valid, granting that a thought process separated the beginning and end of the hypothetical proposition. However, in the case under scrutiny, Nagarjuna is clearly stating that in the very act of "proposing something", one would be "making an error"; i.e.

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[7] Two other translations of this sentence confirm and amplify this reading. "If I would make any proposition whatever, then by that I would have a logical error" (Streng). "Should I have put forward any thesis, then the logical defect would have been mine" (Gradinarov).

the error is nothing other than the proposing, itself. So, no time separation can credibly be argued, and Nagarjuna's thesis remains illogical.

Note that all the present discussion has concerned only the first part of verse 29, i.e. the major premise "If I had a thesis, I would be at fault". We have found this hypothetical proposition logically faulty, irrespective of whether Nagarjuna admits or refuses to acknowledge that he "has a thesis". So, let us now reconsider this minor premise of his, and his conclusion that he "is not at fault".

We have here introduced a new twist in the analysis, when we realized that "If X, then Y" (understood as "If X, then not X") implies "If not X, then Y" (since the latter is implied by "If not X, then X", which is implied by the former by replacing X with notX). So, now we have a new major premise for Nagarjuna, namely "If not X, then Y", meaning: "If I do not have a thesis, I will be at fault".

Taking this implied major premise with Nagarjuna's own minor premise, viz. "I have no thesis" – the conclusion is "I am at fault". This conclusion is, note, the opposite of his ("I am not at fault"). Thus, even though Nagarjuna boasts his thinking is faultless, it is demonstrably faulty!

For – simply put, leaving aside all his rhetoric – all he is saying is: "no thesis is true"; it is just another version of the liar paradox. And his attempt to mitigate his statement, with the afterthought "except my thesis", is logically merely an additional statement: a particular case that falls squarely under the general rule. Moreover, before an exception can be applied, the rule itself must be capable of consistent formulation – and this one clearly (as just shown) is not.

Note lastly, none of this refutation implies that silence is impossible or without value. If (as some commentators contend) Nagarjuna's purpose was to promote cessation of discourse, he sure went about it the wrong way. He did not need to develop a controversial, anti-logical philosophy. It would have been enough for him to posit, as a psychological fact, that (inner and outer) silence is expedient for deep meditation.

6. The Analytic/Synthetic Dichotomy

All belief-systems are *not* on a more or less equal footing. Some are elaborate mazes, concealing numerous self-contradictions. Others more sneakily rely on logical sins of omission, by effectively exempting themselves from scrutiny. The peculiarity of epistemological theorizing, which too many philosophers fail to realize, is the requirement of self-examination, both to develop a realistic methodology and *to test one's theories on one's own practice*.

The system proposed by Immanuel Kant (Prussia, 1724-1804) is a case in point. The **"**analytic/synthetic" dichotomy, in spite of the prestige of its inventor and later defenders, is full of logically arbitrary declarations and circular arguments. The dichotomy is nonsensical, i.e. not a viable philosophical construct, because it fails to explain and justify itself, i.e. its own genesis.

Kant's analysis, rather than being *a priori* and necessary (as he claims), is quite *a posteriori* and contingent. Moreover, it proposes a *static* ordering of knowledge, whereas knowledge can only be understood and validated by consideration of its *dynamic* aspects, its conceptual genesis and development.

Knowledge is not established by linguistic analyses of axiomatic tautologies, or by syntheses of particular empirical data – but by an active, flexible combination of all one's experience and the full range of logical techniques. It is a holistic, ongoing enterprise, depending on the whole of one's knowledge context and all our rational means.

Language plays an important technical and creative role in this genesis, by locking our attention onto a clearly pointed-at or a vaguely known and still-unfolding phenomenon or abstraction. Logic is used to rationalize experience, but it is not arbitrary. Experience is a sine qua non of all conceptual work – i.e. all propositions, even 'logical' ones are to some degree 'synthetic'.

What is missing in the 'knowledge is either analytic or synthetic' proposal is the full realization of the *inductive* nature of knowledge. Many philosophers seem to understand the term 'logic' only in its sense of 'deduction', but

the truth is that deduction is only one tool within logic as a whole, which is essentially 'induction'! Induction too has its rules[8].

In this perspective, different items may indeed be assigned varying degrees of "immunity from revision[9]", which may change under appropriate conditions. For example, the laws of thought are most immune. The law of conservation of matter and energy is more immune than the finding that water boils at 100 deg. C, say. All depends on the amount of data an assumption is based on and how much a change in such assumption would affect the rest of knowledge.

Although the 'analytic' notion was proposed as an explanation of logical necessity, it of course does not follow that its rejection constitutes rejection of logical necessity (let alone of natural necessity, i.e. that of empirical "laws", which it implies but is not implied by). Necessity is a valid, accessible and unavoidable concept.

Logical certainty is possible not only by logical insight (when the negation of a proposition is contradictory, for instance; or again, when a notion is seen to be based on circular arguments), but also by generalization or adductive argument from natural necessity, itself based on previous generalizations or adductive arguments, and ultimately on experiences.

All such knowledge remains in principle revisable, but that does not mean that we indeed always find convincing reason to revise it! The choice of our ultimate principles is thus not purely arbitrary or relative, but depends on sincere and conscientious application of logical methodology, including for a start careful observation.

7. On the Russell Paradox

A class may be viewed as an imaginary envelope, which flexibly wraps around all the class' purported members, however dispersed in place and time, to the exclusion of all other things. The question arises, can the figurative envelope of the class "classes" wrap itself too, or not?

Reviewing the Russell paradox[10], we must conclude that *not all 'word-objects' are 'things'* – measures of things are not themselves to be counted as things. Since classification is an expression of our measurement of things, it cannot itself be counted as a thing. To do so gives rise to a paradox, we should avoid it.

In other words, the problem involved is that the iterative form ("class of classes") is not identical with the simple form ("class"), except very superficially and verbally – so the former cannot logically be subsumed under the latter. There is a sufficiently significant modification of the subject-predicate relation involved, caused by the iteration of the same term, to exclude the reflex of subsumption. The paradox arising if we do not restrain this impulse is precisely what teaches us to exercise such restraint.

The word 'things', note, has many meanings. Sometimes, we intend by it all possible objects of thought. Sometimes, we mean to exclude words from it[11]. Sometimes, we mean to exclude classes; or more narrowly, as just pointed out, classes of classes; ditto, with regard to concepts or to concepts of concepts. Sometimes, the word 'things' includes only material objects, whatever their category. Sometimes, we mean by it 'entities[12]' (material, mental or spiritual bodies, or delimited substances, individual cases of which are generally subjects of propositions) in contrast to their 'properties' (the predicates of place, time, quality, action, quantity, relation, and so forth). Sometimes, in everyday discourse, we refer to 'things' in contrast to 'persons' – i.e. 'things' here means inanimate or non-volitional entities. And there are yet more senses of the word.

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8 As I believe I convincingly demonstrated in *Future Logic*.

9 I took this term (in 2003) from an essay called *Revisionary Immunity*, by a Dr. Greg Bahnsen (d. 1995), posted on the Internet at www.cmfnow.com/articles/pa018.htm, in the website of the (Christian) Covenant Media Foundation. This essay is on the whole a brilliant and important piece of work, an excellent example of logical criticism of confused notions – although the author, motivated by an agenda of religious apologetics (Christian), seems ultimately to advocate a rejection (or rather, an excessive relativism) of empiricism and logic.

10 See *Future Logic*, chapters 43-45, on class logic.

11 Though of course, this distinction may be paradoxical, since the word 'word' refers to words.

12 The word 'entity', of course, is sometimes meant more generally, with reference to any existent.

Thus, whenever logicians refer to 'things', they ought to try and first make clear just what is to be included under that heading.

Incidentally, even worse than 'self-membership' as a concept to swallow, is the notion of "*classes that seem contradictory to what they include*" – the latter seems inconceivable at the outset, at least in verbal appearance! Thus, for instances: "no relationship" is a relationship of sorts; "non-classes" is in a sense a class. There has to be some fallacy involved in such terms, which needs to be clarified. Perhaps the problem is a hyperbole or misnomer?

The answer to this question would be that we are here again dealing with *classes of classes*, and these need not be outwardly consistent with their member classes. Thus, the class of non-relationships still involves a relationship. The class of non-classes is nonetheless a class. The class of empty or null classes does have members. The class of meaningless or self-contradictory classes is itself neither meaningless nor self-contradictory. And so forth.

8. An Illustration of Russell's

More on the Russell paradox: Bertrand Russell illustrates his paradox with reference to:

(a) a catalogue of all books that mention themselves, and

(b) a catalogue of all books that do *not* mention themselves.

Case (a) presents no problem: the catalogue can list itself without contradicting its own definition; whereas, if it does not list itself, it betrays that definition. Case (b), on the other hand, is a problem: if it does not list itself, in accord with its own definition, it thereby becomes eligible for inclusion in itself; but, if it does indeed list itself, it contradicts its own definition. The latter is the double paradox under discussion.

Now, my first objection would be as follows. The catalogue's title (and even, perhaps, a brief description of its contents, an abstract) could perhaps be listed within the book itself– but such a book would not and cannot include a reproduction of the whole book inside itself (not to mention all the other books it lists or reproduces), for the simple reason that the task would be infinite (a book within a book within a book… etc., or the same in the plural).

The book is therefore not *itself* a member of itself; strictly speaking, only words *about* the book are mentionable in it. The terms inclusion or membership, as used here, then, have a very limited meaning. Thus, the plausibility of Russell's example is very superficial, spurious; he is being fallacious, sophistical, suggesting something impossible.

Moreover, every book "includes itself" in the sense that it consists of whatever contents it has and no more. But if a book is conceived as including a number of other books, defined by some statement (e.g. all English books), the book cannot include itself in the sense that this content is *only part of* itself. This would not only signify infinite regression (a book with other books plus itself in it, the latter in turn with other books plus itself in it, and so forth), and infinite size, but it would constitute a contradiction within the definition. The book cannot both be all its content and only part of its content.

In this perspective, defining the book as 'the catalogue of all books that do not include themselves', the Russell paradox is akin to the liar paradox, since the projected book is an entity that has no finite dimension; it can never be pinned down.

A second objection would be the following. Even if we take Russell's construct as a mere list of books, defined as 'the catalogue of all books that do not *mention* themselves', the definition is absurd, since *it cannot logically be realized*. We simply cannot write a book listing all books that do not mention themselves (Conrad's *Lord Jim*, Hugo's *Notre Dame*, etc.), in view of the stated dilemma, that whether we list or not list the book itself in it we are in a contradiction. Therefore, this concept is of necessity a null-class and meaningless.

Logic has not been stumped by the paradox, but has precisely just been taught that the proposed concept is unsound and unusable; it must therefore simply be dropped or at least changed somewhat. There is nothing dramatic in the paradox; it represents one of the functions of Logic. We might try to propose a modified concept, as follows. Perhaps we should instead refer to a library.

(a) Consider a catalogue of all books in a certain library, which is to be placed in that same library. If the book lists itself, it presents no problem. If the book does not mention itself as being in the library, it is simply

incomplete and should be expanded; or its title is incorrect and should be modified ("all books but this one"); or it should be left out of the library.
(b) Now, with regard to a catalogue of all books *not* in our library: such a book cannot both mention itself and be put in the library. If we want to keep it in our library, we must erase its mention of itself. If we want it to mention itself, we must leave it out of the library. These are practical alternatives, which present no problem.
In this perspective, as we seek a practical expression for it, the Russell paradox becomes more akin to the Barber paradox.

9. On Grelling's Paradox

Grelling[13] labels a word 'homological', if it has the quality it refers to (e.g. the word "short" is short, or the word "polysyllabic" is polysyllabic), or 'heterological', if it lacks the quality it refers to (e.g. "long" lacks length, or again "monosyllabic" is not monosyllabic). He then asks whether these two words, themselves, are to be categorized this way or that, arguing:

- If "heterological" is homological, then it is heterological (contradictory predicates).
- If "heterological" is heterological, then it is homological (contradictory predicates).

But it is a misapprehension of the meanings of these words to even try to apply them to themselves. In their case, the references are *too abstract* to have visible or audible concomitants. *Neither* term is applicable to either of them.
Note first that the apparent contradictions in predication either way apply to the word "heterological" only. For, using similar reasoning with regard to the word "homological", although it might seem more consistent to say that "homological" is homological than to say that it is heterological, the sequence of predicates would seem consistent both ways, i.e.:

- If "homological" is homological, then it is homological (consistent predicates).
- If "homological" is heterological, then it is heterological (consistent predicates).

This could be taken to suggest that the term homological is somehow better constructed, while the term heterological has a structural fault. But this is not the real issue here.
The real issue is distinguishing between the physical words "homological" and "heterological" and their respective intended meanings, viz. homological and heterological. When we intend a word as such, we traditionally place it in inverted commas; and when we intend its assigned meaning we use it simply. In the above propositions, through which a paradox apparently arises, the subjects are words as such (in inverted commas) and the predicates are the meanings of such words.
In this perspective, there is no basis for the claim that "heterological" is heterological implies "heterological" is homological, or vice versa. The inference is very superficial, because it confuses the word as such (intended as the subject) with the meaning of the word (intended as the predicate). That is, the inverted commas in the subject are not used sincerely, but we secretly intend the underlying meaning as our subject.
How did we draw out the consequents from the antecedents? Could we see at a glance that the first thesis implies the second? Let us look at the hypothetical propositions in question more closely:
If in the antecedent we place the emphasis on *the property referred to* by the word "heterological", viz. some presumed quality called heterologicality, we would formulate the paradoxes as follows:

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13 See *Dict. of Philo*. p. 135.

- If the word "heterological" has the property it refers to (i.e. it is heterological), then it apparently lacks the property it refers to (i.e. is homological).
- If the word "heterological" lacks the property it refers to (i.e. it is homological), then it apparently has the property it refers to (i.e. is heterological).

If on the other hand, in the antecedent we place the emphasis on the word "heterological" *having or lacking* the property it refers to, we would instead formulate the paradoxes as follows:

- If the word "heterological" has the property it refers to (i.e. it is homological), then it apparently lacks the property it refers to (i.e. is heterological).
- If the word "heterological" lacks the property it refers to (i.e. it is heterological), then it apparently has the property it refers to (i.e. is homological).

In any of these cases, the consequent is constructed by comparing the subject "heterological" to the antecedent predicate heterological or homological; if they are the same word, we 'infer' homological as our consequent predicate, while if they verbally differ, we 'infer' heterological. But in truth, in making these comparisons between antecedent subject and predicate, we have not spotted any quality in the word "heterological" as such, but have tacitly referred to its underlying meaning, and faced that off against the hypothesized predicate.

In other words, the statement that "heterological" is homological (or for that matter that "homological" is heterological) is not as self-contradictory as it appears at first glance; it could conceivably be consistent. In truth, it is indeterminate and therefore meaningless.

More precisely, to resolve the paradox we have to remember how our terms were induced in the first place. We can tell that "short" is short *merely by seeing or hearing the word* "short" (supposing that any one syllable, however written or pronounced, counts as short). But in the case of a term like heterological, you cannot tell whether the word has or lacks the property it refers to, because that property is not a concrete (visible or audible) quality of the word, but something abstract that we apply to visible or audible components of words. If the quality sought is not visible or audible, it is unknowable and there is no way for us to tell which predicate applies.

That is, our initial definitions of those terms, which mention "a word having/lacking a certain quality it refers to", are not clear and precise, because they do not specify as they should that the qualities intended are phenomenal, i.e. perceptible aspects of the word. If the word labels something not included in its physical aspects, the terms homological and heterological simply do not apply. To apply them is to play verbal tricks. Thus, neither of these predicates is applicable to either of these words as such.

It might be objected that words do have non-phenomenal attributes. For example, we often consider a word useful or useless. In such case, we might ask: is the word "useful" useful or not? Yes, I'd reply to that. Therefore, "useful" is homological. Likewise, "useless" is useful, therefore "useless" is heterological. In this perspective, one may doubt the exactitude of what we have just proposed, that homological and heterological are terms that presuppose concrete (rather than abstract) predicates.

But to this objection, one could counter that the utility of a word is ultimately something concrete: a word is useful if it makes a perceptible practical difference in the development of knowledge. In that case, our definition could be modified slightly, specifying that the terms homological or heterological are only applicable when we can first *directly or indirectly* anchor them to some concrete property.

In sum, *these terms must refer to something other than themselves before they can at all be used*. The fallacy involved is similar to that in the liar paradox, where the term "this" is used with reference to itself, whereas it only acquires meaning when it has something else to refer to. Such terms are *relational*, and so cannot refer to other relations in a circular manner or ad infinitum: they need to eventually be anchored to some non-relational term.

Notice, by the way, that if we changed the word "short" to say "shortissimo", with reference to the same meaning, the word would change status and become heterological, since "shortissimo" is not shortissimo. On the other hand, whatever other word we substitute for the word "heterological", Grelling's paradox in relation to it remains apparent. This test shows that in the latter case it is not purely the word that we are thinking of, but rather its

underlying meaning. With regard to the word “useful”, we could also say that it is useful by virtue of its content, or at most by virtue of its being a word (a unit of language), and not because of its specific shape or sound.

6. About "Modern Logic"

1. A School of Logicians

"Modern logic" is the name of *a school* (or set of schools) of logicians. The term refers specifically to logicians with certain anti-traditional tendencies; it is not intended to include all logicians of modern times.
For example, though Jean Piaget is a 20th Century logician, I would not class him as a "modern" logician in this sense. Moreover, most logicians are only in part "modern" in this pejorative sense; they still adhere to some traditional premises and conclusions. An example of this half-half class in my view is Bertrand Russell.

2. Alleged New Methods

Some "modern logicians" claim to have developed "new methods" of validation of syllogism. This claim seems pretentious to me, just a way for these people to give themselves a place in the history of logic. For the question is: *do these new methods arise in response to actual problems – i.e. errors – in the old methods*, or were the latter only a bit wishy-washy? Why is Aristotle's exposition of 'Barbara', say, considered insufficient? It causes no error, as far as I know; at worst, it is perhaps a bit vague. Also, *are these methods really new, or just applications of Aristotle's teachings*? If we look closely, we notice the latter.
Any improvements in clarity, rigor and credibility, the moderns have made are of course welcome. But this achievement remains relatively modest in comparison to Aristotle's original work in that field, unless they have identified errors in the latter's approach. If their only claim to fame is that Aristotle was 'too intuitive', we can reply that their allegedly 'more scientific' insights are also ultimately just intuitions. That is, all logical science is ultimately based on conceptual insight.
As for the specific techniques used by the moderns, they are all mere derivatives of the Aristotelian schema of syllogistic reasoning; they do not stand over and above it, or prior to it. They are just further ways of better digesting the already known – which is all well and good, but does not justify blowing any trumpets.
The modern revolutions that occurred in mathematics – such as non-Euclidean geometry – were (so I have been taught) due to the perception of errors in the old methods, which made it necessary to develop new foundations. I do not see such necessity involved in the development of modern logic; the motive seems rather to have been an intense desire of self-assertion by certain academics. Logic was already adequately "validated" – legitimatized.
Aristotle's work has not been displaced by modern logic, in the way that Ptolemaic astronomy was replaced by Copernicus. The relationship between Aristotelian and modern logic is not even one of inclusion in a larger theory, akin to that between Newton and Einstein, because whereas Einstein found limits to Newton, the moderns did not fundamentally circumscribe the applications of Aristotle. The syllogistic he developed remains valid.
This does not mean that new discoveries have not been made. Some have indeed been very enlightening and fruitful. For example, the studies of classification, hypothetical propositions, of paradoxes, of modalities, of induction, have greatly evolved.
For my part, I think the most important rule for logicians to follow is this: ***any theory of knowledge proposed must fully account for its own genesis within the theory***. A logician must always consider his own thought processes, and whether he has verified their consistency, explained their role and demonstrated their validity within his theorizing about logic. And with regard to this crucial criterion, I must say that so-called modern logicians have all too often fallen short.

3. Non-Aristotelian "Logic"

As already stated, many "modern logicians" – since the late 19th Century – have yearned to do for (or to) Logic, what Copernicus did in Astronomy, or later what Einstein did in Physics. Each one of them was, it seems, fired by the grandiose desire to be the equivalent great modern revolutionary in the field of logic.

They thus inaugurated a persistent assault on Reason, a veritable carnival of Unreason, which has lasted for over a hundred years, with disastrous consequences for many a poor mind and for social peace and wellbeing.

Their conceptual model was non-Euclidean geometry. Just as modern mathematicians came to consider certain Euclidean axioms to be debatable, if not arbitrary, so these modern logicians sought to put in doubt or discard the Aristotelian "laws of thought", and found some new system – a "non-Aristotelian logic".

But this is an impossible exercise, because[1] the laws of thought are more fundamental to reason than Euclid's axioms (in particular, that regarding parallels). *The geometrical model of axioms and theorems is only superficially applicable to logic, because it is itself an aspect or teaching of (Aristotelian) logic*.

When mathematicians decided to review the traditional axioms of geometry, they were using reasoning *by means of* the laws of thought. They argued: "we see no self-contradiction, or doctrinal inconsistency, or even (eventually) contradiction to experience in proposing some alternative axioms and systems; therefore, Euclid's assumptions are not exclusive and irreplaceable."

The same cannot be argued in the case of logic itself, without self-contradiction. We cannot, say, point to the particle-wave duality and say "it seems that contradictions do exist in the world, therefore we shall review the logical axiom of non-contradiction" – we cannot do so, for the reason that such review is motivated and rendered credible precisely by the law of non-contradiction, in the way of an attempt to restore an apparently lost consistency.

The very method used of reviewing one's premises in the face of contradiction and abandoning or at least modifying one or more of them to recover consistency – this very methodology is a teaching of Aristotelian logic!

We cannot say: "I understand that if I advocate contradiction, I open myself to being contradicted; but that does not bother me, because it is a consistency of sorts – I accept self-contradiction."

In the very act of making such a superficially reasonable proposal, we are reasserting the universality of the laws of thought, their being at the very root of reason, inherent in the very act of reasoning. The only way we could conceivably abandon these laws would be to give up all thought, all attempt at rational knowledge. Logic cannot be used against itself: it is the very paradigm and paragon of consistency.

We can suggest: "A can be non-A", or some such "new axiom" for logic, but the resulting discourse will still be nonsense – however nicely wrapped up and ordered, however well "systematized" stealing the methods of Aristotelian logic. Such proposals are an imposture.

Those who propose such ideas are swindlers, profiting from the gullibility and intimidation of many people. It is like in the story of the emperor's new clothes, in which con men sold the emperor invisible clothes, which no one dared to deny were clothes – till a child pointed out he was naked.

There simply is *no such thing* as "non-Aristotelian logic" (i.e. a logical system that denies one, two or all three laws of thought). To come forward with such a system is merely to pronounce words. These words have no collective content, no meaning; there is nothing behind them other than the imagination that there might be something behind them because the phrase is composed of individually meaningful words.

No "Copernican revolution" is conceivable in the field of logic: it would not merely be anti-Aristotelian but anti-rational. Logicians must abandon such vain ambitions, and more modestly continue to expand the scope of logical analysis and the depth of understanding of logic. The role of logicians is to do logic, not undo it. Reason is a precious value for mankind, and logicians ought to be its guardian.

Would you entrust your life to, say, an airplane built by engineers practicing "non-Aristotelian logic", people who feel cozy in the midst of contradictions and in between truth and falsehood? Similarly, in all fields of human endeavor and interaction: logic is a guarantee of sanity and safety.

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[1] As I have explained repeatedly in *Future Logic*.

4. Postmodern "Logic"

As if such irrational currents were not enough, there is (I gather) a new generation of "postmodern" logicians and philosophers who eschew even the pretense of accountability, considering that any discourse that seems to be about "logic" is acceptable. These are of course part of a wider trend, not limited to our field.

Being relativists, these people are not directly attacking anything or anyone. They are not mere anti-rationalists: they are so indifferent to the niceties of reason that they feel no need to justify themselves. They are of course the natural offspring of the moderns, taking their teachings to their 'logical' conclusion. They are more consistently illogical than their predecessors, no longer owing a semblance of allegiance to reason, not needing even to pay lip service to it. Absurdity does not bother them, so they need no logical window dressing for their doctrines.

Indeed, these people take pride in their fashionable madness. They *strive* to be as confusing and incomprehensible as possible, considering that what others cannot possibly understand must be very deep indeed. They have only a very vague notion of what logic is about, but seek to impress other people with meaningless symbolic constructs and use of fancy pseudo-scientific terminology. They prattle away, eruditely formulating fake theories immune to any empirical or rational review. They function as (con) artists rather than scientists.

Yes, such people do exist; some even have teaching positions in prestigious universities. Because most people – including some in high academic positions, including some who are hired to teach logic – know or understand little about logic, they are easily intimidated by such intellectual posturing and imposture. They fear to reveal their own poverty in the course of questioning or debate.

Besides, it is no use denouncing the swindle; no one apparently cares, because few people realize the importance of logic (apart from some simple formulas needed in computer programming). Reason is out of fashion, has been for generations. Logic is too abstract; you cannot show artistic footage of it on TV. It cannot be very entertaining: it requires an effort of thought.

5. Mere Manipulations

Most "modern logicians" base their approach to logic on *the manipulation of pre-existing knowledge*[2]. They do not properly ask: "how are concepts and propositions in the first place produced?" but are content to look into how they think these ready-made products should be ordered relative to each other. Another example: relations between the modalities are discussed conventionally, without having clarified how they are apprehended and how they may be comprehended.

What logicians develop in such manner cannot even rightly be called (as they call it) a "**deductive system**"; it is just a set of invented schemas for ordering given units. Some place the chicken before the egg; others prefer placing the egg before the chicken. They do not ask where both chicken and egg came from. They place their systems in orbit, but do not ground them anywhere. But the proverbial buck has got to stop somewhere!

They do not consider the possibility that their proposed epistemology is bound to skew the results, i.e. give a misleading image of the nature of knowledge.

They have not understood that deduction is only fully comprehensible within an "**inductive system**" of logic (such as the one proposed in *Future Logic* and my other works). These people fail to grasp the essentially epistemological *task* of logical science, which is to find out how humans tend to and should organize knowledge, i.e. how knowledge actually develops and how such development can be optimized.

A true system of logic is one that treats the issue of knowledge as a whole – and in that perspective, knowledge is essentially an inductive enterprise, in which deduction is one of the tools used. Knowledge cannot be likened to a

[2] I would classify this approach as Neo-Cartesian, save for my respect for Descartes. Worse still, they end up manipulating mere symbols (becoming Nominalists). Among the "logicians" intended here, I count even Bolzano, although in his case the manipulation involved is not one of symbols, but of artificial concepts.

construction using "building blocks" (or atoms of knowledge). It is something much more fluid, a process; yet it has apprehensible behavioral patterns and rules.
Knowledge starts with experience of appearances (phenomena, intuitions, and logical insights), out of which cognitive entities (concepts, propositions) are gradually formed (through more or less logical arguments) by humans, in an effort to comprehend and sort out the experiences. *Appearances are the ground of all knowledge*.
Symbols invented by logicians can never be effective "placeholders" for such basic data. Logicians must never forget that their theories are abstractions without meaning if not firmly anchored to their empirical sources. Logic is not only about final, static relations; the ongoing process of induction must always be kept in mind.

6. Thinking Reflexively

Logicians and philosophers must learn to think reflexively – and always ask themselves how they arrived at and can justify their own beliefs and proposals. Even concepts and propositions that seem obvious and reasonable enough must be subjected to reflective scrutiny.
For example, when Wittgenstein II claims that 'understanding' consists in knowing the conditions of truth, i.e. the rules of verification – he sounds credible. But upon reflection, one might ask how such knowledge (of correct procedures) is itself to be discovered and established. Surely, the basis of it cannot be previously known procedures, and so on *ad infinitum*. If we only refer to the said thesis, 'understanding' remains ultimately unexplained. Therefore, it is inadequate to the theoretical task at hand.
That is, some 'understanding' must be accepted as primary – i.e. some knowledge content and logical insights must be irreducible, capable of informing and convincing us directly and fully. Broad principles like the laws of thought must be among these first understandings. Only after they are apprehended and comprehended is it possible to develop specific deductive, and indeed inductive, verification procedures.
Again, Frege insists that thought is not possible without language[3] – relying for his credibility on a very limited sense of the word 'thought' and totally ignoring the issue of how language itself is to be grasped without prior thought. He demands defined terms throughout – but such a starting premise for 'language theory' is unjustifiable, since it generates infinite regression. These are just the hang-ups of a narrow-minded formalist.
Very few terms are predefined in the way Frege expects and demands. With careful observation of our mental behavior, it becomes evident that most terms have inductive definitions that develop gradually by trial and error, going through adaptive changes as relevant data and thoughts emerge); and indeed, some terms are *never* defined (very basic ones like 'existence' are irreducible primaries).
It is ironic that such people, who claim to be logicians, have not understood the basic teaching of logic – that cogency depends on complete consistency.

7. Conventional Logic

Logic is not a convention, an arbitrary setup agreed between self-styled logicians.
What do we mean by "conventional logic"? Here is an example: "If the green traffic light goes on, it is permitted and safe to move on; whereas if the red one goes on, it is not." This is a social convention, useful for living in the world of people.
Many of our propositions are of this sort: they signify an agreement among all participants (which may be imposed by authorities, but must be made known to all others) as to what certain symbols are intended to mean.

[3] Incidentally, if it were true that thought without language is impossible, one would have to continuously speak to oneself, whether in one's head or out loud. Yet, when we become conscious of doing that, we commonly reprove ourselves for being excessively talkative, i.e. for verbalizing things much more than necessary. This shows that we commonly consider words not always needed for thought. The same is true in interpersonal communication – we are annoyed by people who speak too much, preferring those who can control their tongues.

There may be (indeed, must be) some underlying factual (i.e. non-conventional) truth; for example, whether the light is green or red, and whether accidents are less likely if the rules convened are obeyed. But *some aspect is arbitrary, i.e. it could have been otherwise if we had so willed it*; for example, we could have used the red color for "pass" and the green for "wait".

Buddhist philosophers, by the way, use the word "conventional" very freely, with reference to any view they want to discredit. They regard all ordinary – i.e. non-enlightened – knowledge as conventional. That is clearly incorrect usage – at least for those of us who have not *personally* encountered the enlightened view. For the term may only be used in contrast to something non-conventional; it cannot be literally universal without self-contradiction.

In my view, logic in general is very definitely *not* "conventional". Sorting out conventions is one of the tasks of logic, a very minor task. Logic is much broader than that, concerned with the ways to arrive at "knowledge of reality", whatever that be.

> Note also, in passing, that opinions people label as "conventional wisdom" are often neither granted by everyone nor wise. The expression is often just false advertising, to make believe.

8. Absolute Truths

We must admit some truths to be absolute.

Even **if reality is relative to consciousness** in some way, as some philosophers advocate, then *that* observation becomes the framework for "realism" – i.e. *that* is the fundamental truth independent of the observer. Realism does not have to be equated to extreme materialism, but some sort of fixed "fact" must be admitted.

In such case, if consciousness somewhat affects reality – as the idea of relativity here seems to suggest – what sort of impact does the subject and his consciousness have on the object it relates to? Is consciousness (so conceived) a veil, a distortion, or a modifying or creative force? Whatever its effect, the important issue would be *whether we can somehow become aware of such effect and correct our reading for it*.

The techniques of induction are such that they are in principle capable of discovering such eventual effects and correcting our knowledge accordingly. Inductive knowledge is a result of an ongoing process of hypothesizing and confronting our hypotheses with experience. It is a holistic enterprise, which does not statically depend on specific beliefs. It is the cunning way we are able to transcend our actual, or even just conceivable, limitations or faults.

In this context, I hasten to add, the proposed hypothesis of an unknowable (and not merely unknown) "thing in itself" is the inductively weakest speculation, being by definition unverifiable with regard to any experience whatsoever. Consciousness must be admitted to get some part of its object right, if only its realization that it is getting some part of its object wrong. If it were completely wrong, it would not even be able to conceive of an object beyond its ken.

9. Untouched by Consciousness

Beneath all Bolzano's deviant logical terminology, and theoretical misconceptions, one discerns the shadow of Kant. This is part of the ravage caused by the latter's pretentious "**thing-in-itself**", his notion of a "**noumenon**", of something beyond the phenomenal unknow*able* to anyone (but Kant himself, of course) and *yet open* to discussion (somehow, in spite of the inherent contradiction – indeed because of it, because of the perverse twist in it).

In the last analysis, Bolzano is not interested in studying ordinary abstraction from experience, the ways we come to know the unknown; he is instead pursuing a Kant-like "transcendental logic", a means to somehow get to know the unknowable. His sought after object is not real, but "surreal". He wants to do the impossible and inconceivable: to cognize the "in-itself" – i.e. something *untouched by consciousness* – ignoring that the moment he did cognize it, it would not longer fit his requirement.

Note that I am not taking the position that nothing is untouched by consciousness. I believe some things exist beyond consciousness (at least, human consciousness), based on the observation that my own knowledge is variable and different from that of others. I am merely pointing out that there is no need to look for some pristine object unspoiled by cognition; *everything* is pure and virginal until cognized by someone, and consciousness does *not* necessarily pollute its object.

10. Logical Atomism

Modern logicians are inclined to "atomism", cutting statements or texts into parts and then considering the interrelations between these parts and their relations to the whole. The study of the relations of whole and parts has been dubbed "mereology". The parts are viewed as atoms, and together they build up the whole; the relations between them are the structure that keeps them together, their cohesion.

But my question would be: *are the relations between the parts not themselves parts?* The answer would surely be: yes – if our analysis of the whole into parts is to be fully explicit. In that case, one might go on, and ask if the relations do not have relations among themselves and with the remaining parts? The answer again has to be: yes, they do.

From which it follows that there are an infinity of relations and parts – and the proposed atomistic method of analysis is in fact impracticable. Note that it is not 'infinity' per se that is the problem, here – since presumably the world is a whole made up of an infinity of parts and relations. The problem is the need to verbalize all that, i.e. to repeat an infinite world in words.

Clearly, the error of such atomism is to regard all units of thought as *concrete* items; specifically, they are words. Thought is confused with its outward symbols, the words of our discourse. In this view, even *abstract* items are concrete, since they have no real existence till they are put into words. Clearly, the proponents of this view have not thought their proposal through; had they done so, they would have realized its absurdity.

This is in contrast to the classical, Aristotelian, approach, which makes a distinction between *form and content*. The words, the symbols, are only forms – distinct from their contents, the underlying meanings, the realities (or at least, appearances) that they are intended to refer to. The relations exist abstractly, even when not verbalized; and verbalizing them does not make them concrete, it merely tags on a concrete label to them.

For this reason, there is no infinity of relations over and above the first or second relations. There are (abstract) relations between non-relations; then there are (more abstractly) relations between relations; and then nothing more. You cannot propose 'relations between relations and non-relations', because these are identical to the first category, i.e. 'relations between non-relations'. You cannot propose 'relations between relations between relations' (and so on, ad infinitum) because all these are already covered by the second category, i.e. 'relations between relations'.

In the latter cases, the words may differ, but the underlying referent is still the same. As soon as you have a 'relation' between two or more (concrete) things, you have not only the (abstract) glue between the things, but also the glue between that glue and each of these things. There is no new glue to stick the glue; it is that very same glue all through. On the other hand, comparison between this glue and the glue between other sets of things requires a new, more abstract 'relation' – another kind of 'glue'. But that additional 'relation' is singular – it is simply 'glueness'; that is, no further levels of abstraction are possible beyond it.

Moreover, this concrete image of 'glue' to explain 'relations' should not be taken too literally. The abstract has a much less 'real' existence than the concrete. It refers to common measures or degrees between things in some respect(s). These are in a sense 'out there', because we can directly or indirectly compare things; for instance, we can take a measuring tape and observe the proportion between the widths of two bodies. But in another sense, abstracts are not quite 'out there', but depend for their *actual* existence on there being an observer able to compare. Till then, abstracts have only *potential* existence.

The results of comparisons (if carefully made) are 'objective' in the sense that they reflect ultimately concrete events beyond the observer; but they still depend on the presence of an observer – a 'Subject' engaged in measurement. The latter proposition about subjectivity, too, if true, is an objective truth of sorts; note well, it claims to be as factual as any other fact (concerning concretes).

We might thus say that the abstract is a more potential being, compared to the actuality of the concrete, insofar as its existence is observable less directly, i.e. it requires additional cognitive processes (of measurement by someone). Note that results of measurement are in principle repeatable, although in practice the opportunity to do so may pass us by too quickly.
Note lastly: the distinction of 'form and content' may be used not only for 'words and meanings' (as done above); in some contexts, it is intended to refer to 'abstract and concrete' or 'concept and percept' and other such pairs. The underlying image is that of container and contained.

11. Exclusive Judgments

A lot of 'modern' logic and philosophy seems to have arisen because of exclusive judgments of the form "**Q, but not P**", instead of the inclusive "**Q, as well as P**". Instead of *amplifying* past ideas with new insights (for example, adding to Aristotle's subject-predicate logic, by investigating comparatives like "A > B"[4]) – the tendency was to provocatively belittle, or try to reject and replace the old, so as to ascribe more importance to the new. I can't help seeing such behavior as pretentious and arrogant.
To discover that some thesis "P" does not cover all the ground of some area of knowledge does not justify saying "not P", but only "not only P" or "P is not the whole story". Because it is only the assumption that P was *all*, the excessive generalization of it, that can be faulted, and not the item P as such. Particularization is only partial denial; to equate it to thorough denial is wrong inference; it is extremism.
Conversely, we might say that such people themselves *over*-generalize. Thus, for example, as I explained in *Future Logic*[5], Godel builds his theory of logic with reference to a too-limited pool of propositional forms. Or again, the underlying fallacy committed by Frege in his linguistic analysis (literally: cutting up statements into constituent parts) – is to take one example, one kind of case, and to generalize his treatment from there, without attention to the possibility of other cases.

> Frege assumes that all statements can be split up (at will, by the imagination) into two parts: an 'argument' and a 'function'. Thus, in "Caesar conquered Gaul", "Caesar" is the argument and "conquered Gaul" is the function; the latter is like a container ('unsaturated') and the former fills it with a definite content, completing it ('saturating' it)[6]. But, as I have shown in *Future Logic*[7], in my treatment of the Russell paradox, such cutting up of a sentence is not always logically permissible: for instance, statements about membership cannot be permuted without producing contradiction.

12. Empty Terms

With regard to **empty terms** – i.e. terms devoid of referents. Human knowledge is built in part through the imagination. A term may be imaginary, meaning that its referents are knowingly fictional (i.e. we know there is no such animal in fact), or tentatively assumed for inductive purposes (until actual cases are observed).
We often conceive of things we have not yet actually experienced, e.g. in constructing a theory, and then try and find out whether our construct can be confirmed. *This is a standard practice of inductive logic.* Sometimes, we eventually come to the conclusion that our assumption was unjustified, and the imagined term is in fact empty. Sometimes, we arrive at such a negative conclusion, after for a long time believing the term not empty, and then after further investigation discovering to our surprise that it is empty.

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[4] I give this as an example of a proposition not yet permuted into the form "S is P". I could equally give as an example a sentence like "A loves B". See why further on.
[5] Chapter 66.2.
[6] See Jones, p. 147 – "Never ask for the meaning of a word in isolation," etc. The funny thing is that this is precisely Frege's own error here!
[7] Chapter 45.

A proposition involving a term known to be empty is, strictly speaking (i.e. factually), "false". A proposition with a fictional term may be considered conventionally true – for example, "unicorns are horses with a horn and wings". This is conventionally true, in the sense that the definition rightly describes our mental image of a unicorn; but it is factually false, in that there are no unicorns in the material world.

A proposition involving a term of uncertain status in this respect, i.e. we think but do not know for sure that the term has referents, is "either true or false". Frege's claim that such statements are "neither true nor false" is not correct, and sows confusion[8].

Some statements are indeed neither true nor false – for example, "this is false" or "this is true"[9]. But, though composed of words that are meaningful in other contexts and are here put together in a grammatically valid way, such statements are on closer scrutiny found to be meaningless verbal constructs; they have neither referents nor sense. But statements with empty terms, or possibly empty terms, are either true or false.

There are also of course propositions that are false, though all of their terms have referents – because the conjunction of their terms is inappropriate; i.e. the terms do not belong together in the way proposed.

In conclusion, empty terms can only be properly understood through consideration of inductive logic. If they are analyzed with a narrowly deductive logic outlook, like Frege's, they will be misunderstood.

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[8] As does his claim that the only referents of any statement *are* its truth or falsehood! If this were so, surely all statements would have one of two meanings: true ones the meaning true and false ones the meaning false.

[9] See my analysis of the liar paradox in *Future Logic*, chapter 32.2.

7. About Cognitive Development

1. The Fourth R

Logic is essential to human cognitive and psychological development and to successful living, and should begin to be taught from an early age. We speak of The Three R's – reading, (w)riting and (a)rithmetic – as being the fundaments of schooling. But a Fourth R should be added, viz. – **reasoning**, i.e. awareness and use of logic.[1]

Exactly when such educational effort should be carried out is, of course, open to debate. We have to understand the natural development of logical abilities and skills in the absence of interference, before we can determine when best to try and apply some artificial improvements. It is no use trying to impose skills on a child that the child is not biologically ready for; it may even be counterproductive to do that.

Of course, the notion of 'natural' development is a bit idealistic – since our individual skills are in practice affected not only by purely biological factors, but also by the thinking abilities and habits of the surrounding society we personally grew up in (although some social currents may affect some individuals more than others). So rather, we should distinguish between subconscious absorption of logical skills, and their more conscious training.

When we speak of 'cognitive development', we refer to a wide, varied field of study – which ranges from the sensory, intuitive and rational (purely cognitive) functions, on to emotional, psychological and social factors.

Clearly, our interest here is the former domain, the purely cognitive aspects. Moreover, we are interested in experience (sensations and self-intuitions) only insofar as it is 'processed' by reason; i.e. the experiential as raw data for logical treatment. With this in mind, we should perhaps consider our present object of study as more precisely: 'development of the faculty of reason'; i.e. it concerns our rational powers and their use, or our logical abilities and skills.

> Note: I understand the term 'cognition' very broadly, as including perception of sense data and their mental equivalents, intuition of self and the functioning of self (including volition), as well as conception and proposition, logical insight and argumentation. Moreover, it is often taken to include physical, mental and volitional processes preparatory to such cognitive acts, made to position the Subject for cognition; e.g. turning his attention in some direction.
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> In its initial sense, the term 'cognition' is as wide in extension as 'consciousness' differing from it only in intension. Consciousness refers more to the *relation* between subject and object, or the eventual 'substance' of such relation that connects the two; whereas cognition stresses the impact of such relation on the subject, an intuited *event* of knowing within the self or soul. Both also imply a *state* of 'awareness' in the subject – a readiness to receive information, or alertness.

2. Empirical Studies

It is important for logicians to *empirically* study the development of logic in people's minds, from birth to maturation and onward. Obviously, the use and understanding of logic varies greatly from individual to individual (extensional variation), and within the life of any individual (natural modality change).

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[1] The following reflections on cognitive development are intended to put forward some ideas and recommendations of a logician – they are not the work of an early childhood expert or of a cognitive development experimenter. Information I give here is based on notes I took during a series of lecture on related subjects I attended at Geneva University a few years ago to put myself in the picture.

Like most formal logicians in history, who work in an ivory tower of sorts, I have not personally studied the matter greatly; but from the examples given by **Jean Piaget** (Swiss, 1896-1980) and his successors (some of who, of course, did not agree with all his viewpoints), I have become convinced of the value of such studies. Armchair logicians like myself do of course resort to introspection and personal memories, as well as to casual observation and to written history (the histories of popular beliefs and statements, of philosophy and of science); but Piaget ranged more widely or at least in a new direction, studying real children in a purposeful and structured manner, under laboratory conditions.

Logicians had until then tended to concern themselves with the setup of mature minds, almost totally ignoring the fact that logical skills are acquired over time. Such acquisition presumably depends on both nature and nurture.

(a) In part on physiological and neurological maturation (which may vary from one person to the next); and:
(b) In part on cultural osmosis and educational offering (which varies from culture to culture, geographically and across history); and finally:
(c) In part on the efforts of each individual to study logic and train himself or herself in it, and if need be to engage in independent research and thought on the issues involved.

With regard to the development of our organs of cognition, a distinction ought be made between the time of purely physical maturation – and the time needed to learn how to properly use already mature organs. Some children manage to make use of their organs more readily than others, due to different volitional dispositions as well as family and social contexts. Organ development *per se* refers to a potential; the latter must still in turn be actualized.

Logic has evidently got a geography – different peoples, in different cultures, rely on different logical beliefs and skills. To give a common example, East and West are thought to have very different logical paradigms. But marked differences are possible more narrowly, even within cohabiting ethnic, social or family groups. In some societies, males and females may display considerable differences. Even though they do occur, such differences should not be overrated: being all members of the same species our minds are basically similarly constituted and operative. Naturally, people who inhabit different 'worlds' throughout their lives will exhibit different cognitive emphases.

Logic of course also has a history, which logicians would also be wise to take into consideration. I have given some guidelines for such consideration, stressing the need to distinguish between (a) the mere practice of some logical skill, (b) the self-awareness of such practice, and finally (c) the theoretical assimilation of it (formalization and validation, and integration into the larger context of theoretical knowledge). An example I gave in some detail[2] was the a-fortiori argument.

While acknowledging cultural and historical differences in emphasis, logicians should not relativize and withhold judgment. They may pronounce some cultural or historical prejudice or method as inadequate to the task of knowing. For example, with regard to geography, we may pronounce judgment against the anti-rationalism of certain oriental or western logical practices or systems, such as those of Nagarjuna or of Greek sophism. Or again, with regard to history, we may marvel at the twists and turns of medieval and early renaissance thinking as described in Michel Foucault's *Archeology*[3].

In empirical studies like Piaget's, the methodology used must be rigorous. *This depends in large part on the understanding of logic by the experimenters themselves* – if such knowledge is lacking the wrong questions will be asked, and the answers will surely be misinterpreted.

3. Piaget's Model

It should be stressed that Piaget's work is not only about child psychology or cognitive development – many of his observations and concepts may be considered as pure logic theory, equally relevant to adult cognitive processes. For example, his distinction between assimilation and accommodation is very apt.

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[2] In *Judaic Logic* and related works.
[3] See also my essays on this.

> "As modeled by Piaget, the child explores the world and observes regularities and makes generalizations, much as a scientist does. Piaget… recognizes two fundamental cognitive processes that work in somewhat reciprocal fashion. The first is what Piaget called **assimilation**, a process that involves incorporating new information into an already existing cognitive structure [or "schema"]… The second process, **accommodation**, [serves] to form a new cognitive structure that can incorporate the new information… Cognitive development, according to Piaget, represents a dynamic equilibrium between the two processes of assimilation and accommodation."
>
> (*Encyclopaedia Britannica*, 2004. Emphases mine.)

These two processes are not limited to developing minds, but continue to be used throughout our lives. They are not limited to one area of logic, but can be adapted to many different fields. For this reason, this terminology is well worth adopting.

For example, I have proposed a distinction between concept-formation by means of similes and that by means of metaphors. Both are ultimately analogical modes of thought, but the latter is less obvious and more creative than the former. The former may be classified as assimilation, the latter as accommodation. In class-logic terms, assimilation is classifying a particular into an already existing class, whereas accommodation is proposing a new class for it. The same distinction could be applied to theory-formation. If one resorts to pre-existing ideas, it is assimilation. If one finds no adequate solution to the problem at hand that way, one is forced to invent something quite new – this is accommodation.

4. Piaget's Experiments

Some of Piaget's experiments, or his conclusions from them, strike me as absurd, or at least unclear.

In one experiment, for example, Piaget seemingly examined whether or when children realized the Lever Principle, i.e. that 'weight times length' is equal on both sides of a balance in equilibrium. Now I ask – did the experimenter expect children to intuitively know what was not known in the history of mankind till quite late, i.e. until a genius called Archimedes discovered it? Surely, each of us remembers having been *taught* this principle at school (although it is not totally inconceivable that some children guessed it before).

More to the point, there is nothing 'innate' or inherently 'logical' about this principle. It is a *physical* truth, which is empirically evident but far from obvious; one can well imagine a world in which matter would behave differently. So, what was Piaget looking for? All he could hope to find out, at best, is when children are able to *understand* this principle, i.e. at what age they can be taught it. For, if they already knew it, it was probably due to having learnt it from adults somehow.

Again, in another experiment, liquid in a short, wide container is poured out into a tall, narrow one, and the child is asked which of the two containers holds more liquid. Piaget found that children younger than about seven tended to regard the taller (though narrower) container as holding more liquid. He apparently considers this as informing us on when children acquire understanding of the Law of Conservation of Matter.

But it seems to me that this is only one possible interpretation of events. It could be that the younger children wonder whether 'liquids expand or contract like gases, to fit the shape and size of their containers'. This hypothesis concerning physical law is not unthinkable; it is a fair alternative to the 'liquids have constant volume' hypothesis. The latter is not a 'logical' absolute – it is a mere physical law, which happens to be true, but whose truth it has taken mankind a long time to realize. Why should children be expected to have the genius to go straight for the correct alternative? And if they did so, would that be a measure of intelligence, or of narrow-mindedness?[4]

Here again, the onlooker might be tempted to think that knowledge of the law of permanence of matter is considered by Piaget to be a natural development (either innate in human brains or logically inevitable), whereas

[4] Indeed, I would expect children nowadays, at least those raised on daily cartoon watching on TV, to rather first imagine matter to be almost infinitely elastic!

the principle is more probably learned from others (whether by osmosis[5] or by being explicitly taught it), and maybe in very rare cases arrived at by personal efforts of inductive logic (i.e. by observation, formulation of hypotheses and elimination of inappropriate ones).

Perhaps I do Piaget an injustice, but regarding instances like these, it seems to me that his experimental goals or the conclusions he drew from his experiments were not always clear. Perhaps his intentions or inferences were clear in his mind but he did not express them clearly enough, making it possible for other people to misread them.

Be all that as it may, we could formulate the point made as a methodological principle: everything must be made clear, so that other people do not misinterpret what was sought or what conclusions were drawn. Scientists should be careful to specify their interpretations, explicitly stating what should *and what should not* be read into them.

With regard to these experiments, it seems to me (without having looked at Piaget's actual research notes) that *the issues of when and why are not clearly distinguished and correlated*. First, we should list the various ways an item of knowledge or a skill might make its appearance in the subjects – instinct (innate tendencies), just logic (application of the laws of thought), personal observation combined with logic (induction), learning through examples, hints or explicit lessons (from peers, parents, teachers or the media). Secondly, when such knowledge or skill does make its appearance, we would want to devise (if possible) some test that would reveal to us which of the aforesaid sources was the operative one in the individual case at hand. Otherwise, the information obtained is too vague and confused to allow any conclusion to be drawn (other than an age range for *the apparition* of the knowledge or skill in the children examined).

Piaget, in his experiments (both the transverse and the longitudinal), often seems (to me) to confuse *actual* development with *potential*. The conclusion one can draw from them is that the child *happens to have* reached this or that level at age so and so; but the tests do not trace the exact *genesis* of such attainment (explaining why different individuals vary slightly), and they do not make clear whether the child *could have* done better with a bit of training.

Note, however, with regard to the latter issue, I have been told that Piaget (and others) have indeed found that children can often be trained to improve their performance, but what they thus learn remains rather localized to the precise notion or skill concerned and is not readily passed on to other, analogous items. This could be taken to imply that the potentiality and actuality occur pretty much in tandem, and the causes of actualization of potentiality are of little significance. I do not know how far this general conclusion may be relied on. The fact is some children are average, some are precocious, and some are retarded – the questions remain: why and what can be done about it?

The above examples make clear another important criticism (already hinted at) I would put to Piaget, and some other researchers on the ground: *some of this research is billed to be about the development of logical skills, when in fact it is nothing of the sort, but rather about the acquisition of knowledge of basic physical principles*. Now, this is a criticism only insofar as the two topics are confused. The acquisition of knowledge is of course not denied to be an interesting topic; but, though all knowledge acquisition implies a logical process of some sort (which it would be interesting to pinpoint for each item of knowledge in each individual subject studied), this topic is not identical with the issue of logical development.

The latter research is the one most interesting to us in the present context. It is the use of empirical techniques to study the development of logical skills in humans. To engage in such research, one must have a pretty clear idea as to what is meant by 'logical' skills. Clearly, this term must refer to the whole science of logic, and more broadly epistemology; i.e. to all the inductive and deductive notions, acts and processes armchair logicians have identified as used in the acquisition of knowledge. Ideally, each and every notion, act or process should be studied in turn, although in practice this may be hard to do.

Indeed, such finely tuned investigation may be out of our reach in many instances, judging by the way Piaget (and others) have tended to prefer general conclusions such as the following (which are extremely interesting anyway):

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[5] This causality, cultural "osmosis", is worth studying in detail. For example, the idea of class-inclusion is inherent in the very use of words; therefore, one could say that the moment a child begins to learn a language, it is simultaneously absorbing the notion of class-inclusion. Of course, that lesson may not be immediately clear, but may become clearer with time.

> "Piaget saw the child as constantly creating and recreating his own model of reality, achieving mental growth by integrating simpler concepts into higher level concepts at each stage. He argued for a "genetic epistemology," *a timetable established by nature for the development of the child's ability to think*, and he traced four stages in that development.
>
> He described the child during the first two years of life as being in a **sensorimotor** stage, chiefly concerned with mastering his own innate physical reflexes and extending them into pleasurable or interesting actions. During the same period, the child first becomes aware of himself as a separate physical entity and then realizes that the objects around him also have a separate and permanent existence.
>
> In the second, or **preoperational**, stage, roughly from age two to age six or seven, the child learns to manipulate his environment symbolically through inner representations, or thoughts, about the external world. During this stage, he learns to represent objects by words and to manipulate the words mentally, just as he earlier manipulated the physical objects themselves.
>
> In the third, or **concrete operational**, stage, from age 7 to age 11 or 12, occurs the beginning of logic in the child's thought processes and the beginning of the classification of objects by their similarities and differences. During this period, the child also begins to grasp concepts of time and number.
>
> The fourth stage, the period of **formal operations**, begins at age 12 and extends into adulthood. It is characterized by an orderliness of thinking and a mastery of logical thought, allowing a more flexible kind of mental experimentation. The child learns in this final stage to manipulate abstract ideas, make hypotheses, and see the implications of his own thinking and that of others."
>
> (*Encyclopaedia Britannica*, 2004. Emphases mine.)

Although Piaget's theories were later challenged in various respects – for instance, other researchers considered that he "tended to overestimate the ages at which children could first perform certain cognitive tasks" (*op. cit*) – his work rightly deserves to have remained the main reference in this field.

5. Lines of Inquiry

Assuming some ingenious experimenters can come up with appropriate setups, which can indeed yield finite conclusions, I (as a theoretical logician) would suggest the following as some important **lines of inquiry** that they should pursue. Some of these questions have (I acknowledge) already been asked and answered; but many (I submit) have not. For each topic listed, the questions to ask are:

(a) As of what age, or in what age range, perhaps within a given historical and social context, do we acquire the potential for these specific logical skills?

(b) Under what kinds of favorable conditions and triggering circumstances are these potential logical skills actualized?

My wish-list of topics would (offhand) include, though not be limited to, the following:

- When and how do we get to understand *pointing, negating, abstracting, naming,* and other such fundamental acts of reason?
- When and how can *the laws of thought* be said to become operative in thought and action?
- When and how do the basic logical notions of sameness or difference, consistency or contradiction, exhaustiveness or incompleteness, as well as derivative notions like implication and disjunction come into use?
- When and how do the notions of *truth vs. falsehood*, reality vs. illusion, and related modal notions like uncertainty, necessity, possibility, appearance, and so on. – come into use?
- When and how do we begin to distinguish between *our sensory perceptions and our imaginations*?
- What of *introspection*, intuition of self and one's own cognitions, volitions and valuations?
- When and how are different *places and times* respectively distinguished; and when and how are the larger abstractions of space and time generated?

- When and how do children begin to conceptualize, to classify, to formulate categorical propositions, to formulate hypothetical propositions, and so forth?
- When and how do we begin using *adductive processes*, formulating hypotheses and then testing them, and then confirming or weakening them, rejecting or adopting them?
- When and how do we start engaging in *syllogistic and other deductive practices*?
- When and how do we start using *causal logic* – resorting to logical, extensional or natural explanations, or identifying things or agents as causes of events.
- When and how do the ideas of *formal logic* – e.g. symbolizing terms (with X or Y), making general statements about reasoning, distinguishing valid from invalid arguments, and so forth – become understandable to youths?
- As of what age does *the logic of paradoxical propositions* become comprehensible?

And so forth – we can in this way *range throughout the science of logic, and ask the same question of each known logical notion, act or process*.

As far as I can tell, experimenters have far from completed the work of empirically tracing our cognitive development. The questions they have been asking so far have not always been pertinent and systematic enough, because their knowledge of logical science has been rather limited and scattered. For instance, there has been insufficient emphasis on the 'laws of thought' as the basic instruments of logic (although it has been found, for instance, that children before age 6-8 years tend to *juxtapose rather than confront conflicting statements*, i.e. they accept them successively without comparing them and seeking to harmonize them).

Although in my view there is yet a lot of research to be done in cognitive development, I do of course admit that much work of great value has already been done. I have no desire to belittle anyone's achievements. For example, I was interested to learn that a child begins to understand *designation*, i.e. the intent of pointing at things, and even the intent of simple word-sounds, as of nine months of age! Or again, the association of different sensations and their consideration as different aspects of one and the same physical object, is a gradual process, which may take till age 8-9 months or even as late as 18 months.

Differentiation and integration (or analysis and synthesis of percepts), and classification (grouping and subdividing, concept formation), have also been studied. The child at first views objects (e.g. its mother) as a totality, then (till age 3-4 years) distinguishes their various components (e.g. mother's smell or face), and later still (till age 10) is able to reconstruct wholes from parts. Children become able to classify in two stages: first (at age 4-6.5 years), they group things in single classes, e.g. "red" or "round"; and later (at 7-8 years), they can handle compound classifications, e.g. "red circles", and subdivisions, e.g. "circles may be red or green". All such findings are, of course, of logical significance.

6. Experimental Techniques

With regard to experimental techniques, researchers no doubt do, and if not ought to, keep in mind certain guidelines like the following (very offhand):

- It is important for researchers to ensure they do not project their own thoughts onto the child's. Does the child understand the questions asked by the experimenters; or are these tricky[6], ambiguously stated or stated in terms still unknown to the child, so that the answers are unreliable? Does the mere asking of a certain question teach the child something it did not till then know, and so skew the experiment? Does asking a question in a certain way insinuate a certain answer, or reduce the probability of a correct answer? Can the

[6] For example, a child is shown 5 apples and 3 oranges and asked whether there are more apples or fruits. The child tends to answer "more apples", confusing the subclass of oranges with the genus fruits. This is a tricky question, because it compounds a mathematical operation (5 > 3) with a classificatory act (realizing that apples as well as oranges are fruits). Some adults might be misled by such a question. Of course, the point is that the older the child, the less likely it is to be tricked! (Whence the expression "it's like taking candy from a baby".)

child be intentionally taught some relevant notions in such a way that it can answer more questions, more precisely; i.e. reveal more about itself?

- How far can one generalize results from one or two children in one place and time, to all children? Clearly, researchers should test the limits of their generalizations; e.g. in different cultures. In some cases, the tests used on children should be tried on adults; we might well find many adults (as well as children) failing them. For example, one test found that children (I did not note their ages or other experimental details) tend to regard "If–then" statements as exclusive, i.e. as meaning "If *and only if* – then" (what modern logic has labeled "iff–then"). I think that is kind of funny, because in my experience many adults are still not clear as to the difference between these two forms!
- Experimental queries should be clearly formulated. To avoid all ambiguity, logical statements should be expressed in formal terms, rather than merely descriptively. For examples[7]:
  - "Awareness that one changes opinion over time" may be formally stated as "I used to believe X, but now I believe Y (or more vaguely, not X)".
  - "Awareness of the differences in perspective by different people" = "I think X, but my friend thinks Y (or more specifically, not X)".
  - "Awareness that some opinions are false" = "Someone (I or another) believes X, but in fact Y is true (or at least, X is false)".
  - "Awareness of difference between appearance and reality" = "It seems that X, but in fact Y (or at least, not X)"[8].
  - "Prediction of belief changes in different contexts" = "If I saw X, I would get to believe Y".[9]

7. Private Languages

The following is mere speculation on my part, but I wonder if a child might not, at some stage in its cognitive development, before discovering and adopting all the language(s) of parents and neighbors, have *a temporary, private language* – a simple, personal invention, consisting of a small number of words, which might be variable (i.e. a word might formed ad hoc and soon forgotten, to be later replaced by another word for the same thing as needed).

I would not be surprised this to be the case, given my theory that *language is a tool of personal thought, before it is one of interpersonal communication*. I include in the term 'language' not only (imagined or spoken) sounds, but (imagined or played-out) gestures[10]; for the essence of language is *intending* meanings for symbols, intention being an act of volition of the subject (or soul), or more precisely one of velleity.

Note however that, if this hypothesis is correct, the private language of early thought should not be necessarily identified with the sounds uttered out loud by the child or its gestures, because it may be that at this stage the coordination between thought and speech or gestures is not yet perfect. Nevertheless, we should not exclude that some 'baby talk' may be part of the child's private language, while some of it (like papa, mama) may be inspired by the public language overheard in the family environment.

I gather that Piaget considered that children do not grasp language before they are about 18 months old, although they already manifest considerable pre-linguistic intelligence. Granting this, it would be at about that age that a transitional private language might appear. This would allow the child to begin personally engaging in some

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[7] These examples are taken from actual experiments, through which children of about two were found to have the described abilities. I do not remember the details of the experiments, and so cannot comment on their accuracy. All I noted was "refer to article by Gopnik and Astington".

[8] E.g. "this looks like a stone, but is in fact a sponge" – though note that this could also be viewed as an example of the act of reclassification.

[9] This is a beginning of hypothetical thinking, note.

[10] Later, of course, a third form of language is developed, namely written language, the use of visual symbols.

verbal thoughts (those it is already able to have), even before having received corresponding generally accepted words from its environment.

Thus, I am suggesting that a child instinctively learns a little *about* language use within himself or herself, before learning the specific, much more developed language taught by the surrounding segment of humanity. The child may first invent a private word, then in an intermediate stage substitute for it a word more or less resembling a public word for the same object, then finally master the public word; in that way, the transition from private to public language would be gradual, with some overlap.

Moreover, it may well be this internal ability's development that makes possible the subsequent external ability's development. This ability to invent language certainly exists at a later age, in older children and adults. Without such an ability, humanity would not be able to develop language further as need arose. And of course, language had to have a beginning, somewhere in the depths of our history. Therefore, the issue here is not whether private language occurs at all, but only at what stage of development it occurs.

> I have heard of an experiment, that a prince ordered made, in which a child was isolated from other people since birth to ensure it did not learn from anyone how to speak. The experiment aimed to discover whether mankind has a natural language. Not surprisingly, as it grew up the child did not seem capable of any meaningful speech.
>
> This story may be true, but it proves nothing, because the language the child might have invented for personal use would be incomprehensible to others. It was silly to expect the child to naturally speak English, or whatever it was the ruler spoke. Furthermore, the child's internal use of language may never have translated into external speech or gesture.
>
> Moreover, judging by modern findings, a child so imprisoned, one deprived of affection and of sensory and intellectual stimulation, would grow up as an idiot, if it at all survived the ordeal. Therefore, such an experiment would be distortive and not answer the question asked.

As I said, the hypothesis advanced here is speculative. I do not know what modern experiment we could devise that would settle the issue. Not that it is very important to do so; just a matter of curiosity.

8. About Causal Logic

1. Induction of Causatives

Induction of causative propositions, like for most other kinds of proposition, consists largely in the process of *trying to 'fit-in' the empirical data into this or that morphology* (i.e. **m**, **n**, **p**, **q**, etc.).
The proposition is our (working) hypothesis, while our relevant experiences and memories (the phenomenological facts) are the data used for testing that hypothesis. As usual, we seek for the pattern that will best express and assimilate the data at hand.
The reasoning involved is: 'try this form – does the data fit in it?' – 'no! therefore, this form is not quite appropriate, try another'. This is done repetitively for each set of facts and tentative propositional form.
By trial and error, we repeatedly adapt our estimate of the overall causative relation involved to the available database, which we actively seek to expand.
In formation of a causative proposition, terms (or theses) are variously related according to the conjunctions or non-conjunctions of their presences and/or absences, i.e. through matricial analysis, until the appropriate categorical (or hypothetical) proposition is settled.
Note that this resembles but is not the same as concept formation, where similarity between things is sought and then each new thing is tested for membership.
An example of such 'construction' of a fitting hypothesis (propositional form) is to be found in historical judgment[1] (i.e. trying to formulate general propositions about causation in history) – which is mainly *extensional* in mode.
Note additionally that the disjunction between the specific determinations suggests a possibility of induction by the *factorial analysis* method described in my *Future Logic*.

> Incidentally, the word 'conditioning' (often used there) is an apt adjective for all *non-categorical* relations, including conditional propositions (that tell us one item is true, if another is so) in the various modes of modality (in the logical mode these are known as 'hypotheticals') and their disjunctive forms. The term as such is relatively new, dating I gather from the 15th Century – but its root (the Latin *conditio*) is very old, and its underlying meaning is no doubt as old as human reason.
>
> The active form 'conditioning' is admittedly originally intended to balance the passive form 'conditioned', rather than (as sometimes used, by me and others) a general term covering both directions, i.e. the relations of 'conditioning and conditioned' as a whole. But this is a limitation of our language, which in no way renders the term illegitimate. The term is used in this sense not only by logicians, but also by scientists in their theoretical discourse (e.g. by Pavlov) and by common technicians (e.g. 'air conditioning'), because of its causal connotations.

2. True of All Opposites

It is true of *all* opposites (X and nonX) that they invariably *must succeed each other, sometime and somewhere*, in time (natural modality) and/or space (extensional modality) and/or in thought (logical modality), and therefore such sequences ought not be regarded as *causative* relations in the strict sense.

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[1] See for example Hugh Thomas, *A History of the World*, p. 230 (quote passage) where an explanation for an increase in population is sought (by the above stated means). Many examples may also be found in Darwinist evolution theory. An apt description of extensional causation, by the way, is the phrase "correlation between attributes" (used somewhere by Rosch).

For example, we cannot say 'health causes sickness' or 'peace causes war', just because we observe that the first term (health or peace) invariably precedes the second (sickness or war, respectively)!
Therefore, when we define the causative relation, with reference to conjunctions or non-conjunctions of presences or absences of two or more items, we should, if only parenthetically, except formal relations of mutual exclusion and exhaustiveness between contradictories.
For we normally understand causation as a not-obvious relation, one which we cannot establish a priori. Proposing the sequence of formal opposites as causative provides *no new information* concerning them, since that is a universal given in a world of multiplicity.
Returning to our first example: it is not health that causes sickness, but some germ or virus (say) that attacks the healthy organism and makes it sick. Again, in our second example: it may well be that peace *changes conditions of society in ways that really give rise to* eventual war, or vice versa. But in such case, precise analysis of the causatives involved is required. Certainly, it is not peace *per se* which causes war, but rather (say) the passing of generations and perhaps the rise in wealth and conceit, so that people forget the horror of war and are again willing to engage in it.

3. Extensional to Natural

On tropology or aetiology: We often *reason from extensional to natural modality*, i.e. from transverse observations to longitudinal conclusions, or vice-versa.
Such extrapolation occurs notably in astronomy, where the evolution of stars and galaxies is not observed with reference to one and the same star or galaxy, but by observation of different such entities at presumably different stages of their development, and then hypothesizing a common course of development for them all, and the assumption that they are each at a different stage along that standard course.
Conversely, in the field of psychology, from the experience of some people with certain pathologies, we assume that under certain circumstances the same could happen to other people. In other words, we are not satisfied with mere ad hoc observations on individuals, but assume some underlying nature or natural structure in common to individuals of the same kind.
Because of such habits, it is important to identify and clarify the forms these reasoning processes take. There are surely many varieties of it, both categorical and conditional. Such leaping from one mode to another *is not formally deductive, but an inductive pattern*. We should perhaps give it a name, to ensure we focus on it – say, "modal extrapolation".

4. Hume's Denials

David Hume denies the very concept of causality – but in the same breath offers us an explanation of our belief in it, viz. that causal argument proceeds by association of ideas. I have criticized this claim elsewhere[2], but here wish to stress that offering an explanation is claiming to know a cause – therefore, Hume's thesis is self-contradictory.
Nevertheless, there are some grains of truth in his thesis, which by the way explains why it has seemed credible to so many people since he stated it. To see these undercurrents of truth, it is important to distinguish between the issues of how to define causality in general and of how to get to know particular instances of causality.
Clearly, before we can deny causality, we must have some idea what it is we want to deny. Hume admits a simple definition of causality (or rather causation, to be exact) as "constant conjunction". This definition has some truth, but is debatable and ultimately inadequate. Thereafter, the issue arises, can we establish contents fitting this definition. Hume denies it, but (as just pointed out) his denial turns out to be self-defeating.

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[2] See *Phenomenology*, chapter 2.5; and *The Logic of Causation*, chapter 16.2.

Hume focused on *our incapacity to apprehend causes immediately*, and suggested that in allegedly 'reasoning' from a cause to an effect (or backwards, from effect to cause) we were merely expressing our mental habit of *ideating certain things together*. Notwithstanding Hume's errors, I would suggest the following to be the undercurrents of truth he was perhaps (though unsuccessfully) trying to bring out:

a. ***Ab initio*, nothing has any apparent cause**. That is to say: causality is not something one can directly observe. 'Objectivity' requires that we do not begin our search for knowledge with a prejudice concerning causality in general and about specific causal propositions. Causality and particular cases of it have to be established gradually over time, because the facts logically point us in this direction. We cannot at first sight make such claims with certainty – but (*contra* Hume) this does not exclude the possibility that we can eventually arrive at such conclusions through appropriate logical efforts.
b. **Indeed, causes can be found through *induction***. The method appropriate for finding causes is not deductive – nor for that matter Hume's 'association of ideas' – but inductive. Practical ways to attain such knowledge were first elucidated by Francis Bacon (1605), a century and a half before Hume's comments. (I have further clarified and developed these methods in my *The Logic of Causation*.) Hume's thesis rang true in some ears, because he raised awareness that a process was involved. He identified that process as merely psychological; but in fact, it was logical – using inductive logic.

We should, to be precise in the present discussion, refer to volition by others and our less conscious own volitions, as well as to causation, noting that most of our own volitions are known directly and immediately, in the way of self-experience – i.e. 'intuition'. It is worth pointing out that Hume tacitly admits this last claim when he tries to explain knowledge of causation through 'association of ideas' – since *this implies he and the rest of us can look into our mental activities and directly obtain that insight*. Thus, Hume's attempted critique applies specifically to causation and not to volition, note well.

It should be stressed that the present rejection of Hume's identification of causal reasoning with mere association of ideas does not imply a denial that we do engage in association of ideas. This mental process does occur. Indeed, it sometimes occurs on the basis of assumed causal connection – but it also, and more often, concerns objects *known to be without* any such connection. The objects of thought may be mentally associated merely because they happened to coexist in our sight *once* for a moment – even if they have *at all other times* been visibly separate. Moreover, mental association does not require any coexistence *at all ever*, but may occur for quite incidental or accidental reasons. Two things may be mentally associated because of some tiny or vague resemblance, or even simply because we happen to have given them names that sound somewhat the same.

Indeed, Hume's critique depends on these very facts concerning association of ideas for its (illusory) force. If association of ideas was always based on constant conjunction, it would not seem so loose a relation but would indeed suggest underlying causal connection. Thus, Hume on the one hand pretends to equate those two concepts, but on the other hand cunningly exploits their difference, in order to cast doubt on causal reasoning.

Furthermore, he does not explain the distinction we all make between cause and effect, considering that the idea of the effect sometimes (and in some cases, always) mentally precedes that of the cause, even if materially the cause always precede the effect. Clearly, this opacity is just one aspect of his deliberate confusion between an idea and it object. But such a subjectivist notion is anti-rational, since Hume obviously considers (or wants us to consider) his own skeptical doctrine as objectively true.

5. Hume's Mentalism

It should be pointed out that Hume's position on causation is *'consistent' with his position on sensory perception*. Given his belief that our apparent perceptions of matter are in fact perceptions of the mental images ("impressions", or "ideas") produced by sensations, and not perceptions of the things that triggered the sensations, it is not strange that he should advocate an "association of ideas" view of causation.

Hume is apparently unaware that this position on perception is logically self-contradictory, because it starts with a belief in matter (including a human body with sense organs, receiving sensory signals and passing them on to the mind), and ends with a denial of it (i.e. an affirmation that all we are able to know are mental impressions or ideas). Moreover, Hume leaves unanswered the question as to *who* has these 'ideas'; i.e. he ignores the Subject.

Hume's concept of association of ideas can also be applied to the other type of causality, namely volition, by effectively denying the existence of a willing self. If volition is *identified with* sequences of mental phenomena like desires, aversions, etc. and perceptible actions of mind and 'body', then there is no need for or place for a concept of a 'self' engaged in willing. Thus, in this view, attitudes, affections and appetites are 'ideas' of sorts, and apparent 'volition' is simply causation at the purely mental level between such ideas and certain 'actions'.

Here, the antinomy consists in leaving unexplained who it is that is associating ideas. If there is no Agent in volition, and no Subject in cognition, no cognitive processes can be depicted as 'in error'. So, how is it that Hume is wiser than the rest of us, and can spot these errors of thought? And moreover, if we have no choice about our mental behavior, what is the purpose of his indicating our errors?

As I have explained elsewhere[3], volition is not a causative relation between *influences* (apprehended conditions) and apparent actions (physical or mental events), but a totally different kind of causal relation, between a soul and its intentions and acts of will. The latter are not phenomenal, but intuited by the Subject. Attitudes, affections and appetites are not substances, but essentially intentions of the self. They influence its acts of will, making them easier or harder; but they are not causatives of them, they are incapable of producing them. The acts of will are caused by the soul, using a causal relation fundamentally different from causation, namely volition.

In both domains, whether through apparent bodily sensations or directly in the mind, Hume seems to consider the arising of 'ideas' (which are thereafter mentally associated) as spontaneous: he is effectively denying all causality. His skeptical view of causality is not based on a thoroughgoing psychology, but is filled with inconsistencies.

Hume, like many philosophers before him and since, approached the issue of causality and other topics in the way of a 'spin doctor'. He was not scientifically minded, but intent on justifying his philosophical slant of skepticism. I submit: he *wanted* to invalidate our knowledge, and sought pretexts with this goal in mind.

He perhaps only wanted to shock his peers; or maybe he had a perverse wish to destroy human knowledge or to hurt people's minds.

It is legitimate for logic to admonish: such twisted motives are unworthy of philosophers. Philosophers should not bring their personal problems into the public arena in that way. They should approach the subject in a responsible, mentally healthy way, with benevolent intentions. And perhaps the best way to insure such balanced behavior is to lead a pure life….

6. Constant Conjunction

I should stress that Hume's "constant conjunction" is a vague expression.

I have generally taken it to mean "the constant conjunction *of the effect with the cause*", and thus to refer to the positive side of causation, namely "if C, then E" (i.e. "the conjunction C + not-E is impossible") – and I believe that is what Hume had in mind when he used that expression.

I have also considered the inverse or negative side of causation, namely "if not C, then not E" (i.e. "the conjunction not-C + E is impossible"), to be not explicitly intended but still tacitly included in the preceding statement *by way of analogy*. That is, one can likewise refer to "the *constant conjunction* of the absence of the effect with the absence of the cause".

But it occurs to me that, taken literally, the expression "constant conjunction" could intend "C and E are always together", which more neutrally includes both "E is always with C" and "C is always with E". That is, it could be taken to also imply "if E, then C" (i.e. "the conjunction E + not-C is impossible"), which by contraposition means "if not C, then not E".

Thus, the expression could mean not just the positive aspect (complete causation), but also the negative aspect (necessary causation). So, it may be my accusation that Hume missed out on the negative aspect of causation was not very fair![4]

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[3] See *Volition and Allied Causal Concepts*, chapters 5-7.

[4] This needs to be checked out again in his works, to be sure one way or the other. Note that it could be that he usually meant one aspect, but occasionally meant both.

With regard to interpreting constant conjunction, note also that when two items occur together invariably, one is either the cause or the effect of the other – *or both are effects of a common cause*, i.e. of some third item yet to be identified of which they are parallel effects[5]. Thus, constant conjunction is not always taken to imply a direct causative relation between the items concerned, but is sometimes interpreted more obliquely (perhaps somewhat conventionally, because the formal relation is identical).

Constant conjunction leaves us with a doubt, then, whether one of the two items is before or after the other in time, or they are simultaneous; for causes and effects may be simultaneous or in orderly sequence, and effects of a common cause may be simultaneous or either one precede the other. The only rule we can lay down at the outset (according to our traditional understanding of causation) is that a cause cannot be after its effects; or conversely, an effect cannot precede its causes; this may be called the rule of 'orderly sequence'.

Note that this concept of "effects of a common cause", though most evident in relation to strong causation, can be extended to the weaker determinations, too.

7. Billiard Balls

Hume claims (in his more materialist phases, i.e. ignoring his 'association of ideas' discourse) that causation is based on observed reoccurrence of a sequence of events, giving the example of a billiard ball impacting another billiard ball.

But Newtonian Physics in this context appeals not merely to a generalization of happenstances, but to *larger adductive hypotheses*, such as the Law of Conservation of Matter and Energy[6], which affect a broad spectrum of phenomena – and not only the specific billiard balls at hand – in tried and consistent ways. On that basis, causation is viewed as an actual *transfer* of 'energy'.

This 'energy', though initially defined with reference to 'work' ('force' times distance), is ultimately taken to imply a 'substance' of sorts (e.g. the energy of light). In this perspective, the first billiard ball has on impact sent energy to the second – we thus *substantiate* the causal relation involved.

There are other situations of apparent causation for which a substratum is similarly conceived, and justified by reference to larger considerations. Thus, causation does not for us consist of mere repetition, but we imagine an underlying 'connection' of which the repetitions are but a symptom.

Underlying the idea of causation (and many other ideas of ours) is the postulate of *continuity* of phenomena. If I pass a ball to my friend, we could regard the ball as abruptly disappearing from my hands and spontaneously appearing in his. But this is empirically less justified, since the fact that continuity *appears* to us cannot simply be ignored without justification. We prefer to regard the two balls as *one and the same*, for we seem to 'see' the ball passing from hand to hand.

The continuity is thus reasonably evident. It is a general assumption applicable to such cases (provided the particular phenomena at hand do not suggest another assumption). So, causation rests on larger theses than Hume claims.

This insight is important, because it suggests that we can presume a *singular* causative relation without referring to *general* ones. In which case, general causative propositions are, as their formal quantity implies, sets of singular causative propositions. Even if in practice we may be epistemologically unable to discover singular causations *except through* eduction from generalizations, it remains conceivable that the latter generalities are ontologically mere groups of singular cases.

In this manner, we show that, contrary to Hume, causative 'connection' is based not only on observation and statistics, on direct generalization, but also on wider considerations and adductive postulates that suggest

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[5] See *The Logic of Causation*, chapter 2.2.

[6] Quite incidentally: speaking of energy, is the Big Bang considered costless in terms of energy? If all that motion is not free of charge, does that mean the Big Crunch is inevitable? Do such questions suggest the Law of Conservation is open to doubt? As for Creationism, it is not only concerned with the cause of the Big Bang starting, but more radically with the surprising very existence of matter/energy *to* bang!

causative events to be primarily individual. Constancies of conjunction are seen as mere repetitions of individual connections. This justifies (or adds justification to) the concept of Causation.

8. Against Kant on Freewill

Various comments against Kant's view of freedom of the will.

As I explain elsewhere[7], freedom of the will should not be conceived as "doing what you want", in the sense "doing what you desire", for being moved by random desires is not freedom but slavery. It does not follow that, as Immanuel Kant suggests, freewill is "doing what your reason tells you to do".

The colloquial definition of freedom, "doing what you want", should be clarified to mean that our actions express *our personal will*. It is the "you" rather than the "want" which is at the center of that popular definition. "Want" is here not intended to refer to values, wishes or purposes (be they rational or irrational) that may have preceded the "doing", but is merely a *post factum* inference from such doing; i.e. it is an interpretation of the will that did occur after it occurred. The doer or author is thereby held responsible for such "want".

Freedom of the will refers to our willing irrespective of influences, such as desires or rational judgments or whatever. The point in characterizing will as free is to stress *it is the agent* that wills, and the influences are not determining causes. In that case, *whether the agent wills in accord with or against some ethical injunction, he is indeed responsible for his action*.

Kant seems to claim that the will is only free when it is aligned with the dictates of reason, suggesting that the only alternative to that is slavishly following your passions. He argues: if you disobey reason, you are a puppet, therefore, obey it, and be free. *Non sequitur*!

Logically, if Kant's thesis on volition is true, people have no freedom or responsibility either way, and can neither be blamed nor praised for whatever happens to them. In this perspective, if reason is heard and obeyed, its ethical injunction (or whoever suggested it) becomes *the causative* of virtuous action, and the subject does not merit praise – just as, if reason is ignored or disobeyed, the subject's desires and impulses take control, and he is devoid of blame. Thus, Kant did not think his proposal through sufficiently.

Clearly, we must say that the choice to submit to reason implies an *anterior* act of freewill, which has to be spontaneous, otherwise reason would be controlling the agent against his will. Some people are unmoved by rational arguments, even if reason does influence many of us. Thus, the will is fundamentally as independent of reason as it is of passions. The agent has a choice between the two. If he fails to follow reason, he is drawn by passions; if he follows passions, he ignores reason. But ultimately the choice is spontaneous: that is freedom of the will.

It is interesting to note that some post-Kantian philosophers have come to the contrary conclusion that we are 'free' only when we act *against* reason. This very postmodern posture is in a way a predictable outcome of Kant's rationalist-moralist stance. If one realizes that rigid adherence to principles like that proposed by Kant is just another form of slavery, the only space left for freewill seems to be moral anarchy.

But this "anything goes" position is just the hedonist side of the same coin; it is not a logical answer to Kant. It merely reverts to the idea that freedom is "doing whatever you wish". Kant's objection to that remains valid[8] – even if his proposed alternative, "doing what reason orders", is also objectionable.

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[7] Again, see *Volition and Allied Causal Concepts*, chapter 5-7.

[8] Kant here is of course reaffirming an ancient wisdom, found in the major religious traditions. When 20th Century Western man rejected Judeo-Christian religion in favor of the 'pleasure principle', Kant's wise insight came to seem like old-fashioned, rigid 'moralism'. But now, perhaps thanks in part to the spread of Buddhist ideas in the West, many people are beginning to realize again that the unbridled pursuit of pleasure is ugly, weak, and destructive of self and others. The characterization of hedonism as slavery is increasingly perceived as accurate, once one reflects on the many ways commercial and political interests use this cunning means to exploit and control the populace. The "hippy" revolution of the late 1960's was not the liberation it claimed to be, but a thorough enslavement to drugs, sexual promiscuity (ending in depravity), and rock and roll music (i.e. omnipresent loud noise).

The dilemma can only be overcome through deeper understanding of the relation between agent and volition, and influences like desires or rational-moral insights.

It is important to distinguish one's self (or soul or spirit) from one's body and mind. The latter include all one's involuntary thoughts and emotions, i.e. all one's felt affections and appetites. It is a cognitive error to identify with any such *passive* body and mind event, i.e. to think: "this is me or an expression of me". The self may be dissociated from such events; they are essentially 'outside' it. (The self is "empty" of such relatively material and mental events, to use a Buddhist phrase.)

However, this does not mean that we may dissociate ourselves from our voluntary physical or mental *actions*. The latter must be viewed as extensions and expressions of the self that wills them; the self is responsible for them, however much influenced by passive body-mind factors. We cannot, in an attempt to act viciously without taking on blame, argue: "since this body-mind is not wholly me or mine, all its actions are not me or mine". This too – i.e. the failure to identify with active body and mind events – is an error of judgment.

The role of reason here is thus clear: it serves primarily to honestly distinguish the active from the passive, i.e. the areas of responsibility from those of non-responsibility in the life of the self. Such lucidity does not guarantee morality, though it is a precondition of it (and therefore in itself a moral act). Reason here acts as a counterweight to the influence of emotion. The self must still thereafter intuit the 'moral' choice and exercise freewill in that direction.

An act of will may be considered as most 'free' and 'responsible' when its Agent is maximally aware of all the positive and negative influences impinging on him, *and* of his having freedom of action and responsibility for his actions all the same.

By definition, influences are conditions of which one is more or less aware, and which thereby play a role in the volition concerned. Here, we note that the degree of such awareness affects the degree of freewill. A fully awake person has more freedom and responsibility than someone who functions half-asleep.

Note well the radical difference between freedom through awareness and freedom from awareness. People who affirm the existence and freedom of the will do so with the good intention to take control of their lives. Whereas, people who deny or doubt it generally do so in order to excuse themselves for past shameful or evil acts, or in order to facilitate such acts in the present and future. They reject freewill so as to liberate themselves from their conscience, by putting it to sleep. They cunningly use such philosophical denial as a bad influence on their will, making possible unbridled pursuit of unethical values.

9. Alleged Influences

An *alleged* influence on volition is not necessarily an influence in fact. The mere saying that something was an influence on one's action does not imply it to have indeed been so; i.e. it does not make the alleged influence ex post facto become an influence. This may seem obvious – but the issue is worth raising, because people confuse initial influence with later influence.

> For instance, a debtor may tell a creditor "I couldn't pay you off today because of my son's wedding", when in fact the wedding did not actually influence the decision not to pay, or take so much time that payment was impossible, but was used as a false excuse, a *pretext*. If neither the wedding itself *nor the thought of* the wedding in fact affected the non-payment in any way, the latter event cannot truthfully be said to have been caused *or influenced* by the former. However, this does not imply that the creditor cannot thereafter be influenced by the excuse given, if he has believed it or even if he has disbelieved it.

For X to 'influence' some volition Y, it is necessary that the thought of X *precede* the action Y, as well as make it easier or harder to some degree. If the thought of X only occurred after Y (e.g. as when X is falsely declared ex post facto as the reason for Y) – the reality of X *not* having influenced Y is not changed. However, X may well thereafter, after such false declaration has been made and mentally registered, begin to influence *other, subsequent* actions of the initial agent (the agent of Y) or of some other agent(s).

Saying something is so, doesn't make it so – even in the realm of the spirit. There is 'objective' truth, even with regard to 'subjective' relations. One may, for lack of attention or introspective skills, or due to weak memory, not be sure as to what one willed, or what influenced one's will. In such cases, one's witness concerning one's inner

processes, even if sincere, may be erroneous. Additionally, in some cases, even knowing the truth, one may deliberately lie, wishing to manipulate someone somehow with one's lies.
An external observer is of course very disadvantaged in assessing the will of someone else and the influences impinging upon it. In such contexts, we often rely on what could be construed as *post hoc ergo propter hoc* thinking, but more precisely (usually tacitly, of course) consists in eliminating all thought-of alternative explanations of perceived behavior but one, or opting for the most likely looking explanation in our present perspective.
(This is of course a whole field of logic by itself, which I cannot hope to cover in a few comments.)

Incidentally, when we speak of someone having a certain '**spirit**', we originally mean that the person concerned functions with a certain *attitudinal pattern*, i.e. we refer to aspects of *his own* volition. For examples, a person may have 'a good spirit' (e.g. be hard working, enthusiastic) or 'a bad spirit' (e.g. be constantly complaining, resisting).

But some people have *reified* this sense of the word 'spirit', implying that some external non-material *entity* (something like a ghost) *invades and inhabits* people, forcing them to behave in this way or that. The actions of the person concerned are in that case no longer his own, but someone else's. The person's soul has lost its freewill, and been subjected to a spiritual takeover.

This mode of explanation is found in the Christian religion and among African shamanists, for examples. 'The holy spirit', 'the devil made me do it' – are cases in point. Another common belief is that wine or liquor instills a 'spirit of drunkenness' into the drinker.

The trouble with such explanations, logically, is that instead of explaining volition by the influence of non-determining conditions, they ipso facto annul volition and void responsibility.

10. Analogical Inferences

Analogies as bases for inference from one cause to another: this methodology is apparently currently used in medical science, and should be logically evaluated. Two arguments are proposed: one (a) refers to ***similarities in the effects of two causes***; the other (b) refers to ***resemblances between the two causes***.
Both the arguments were relayed by TV journalists[9], and concerned the possible transmission of 'mad cow' disease (MCD, here) on to humans in the form of Kreuzfeld-Jacob disease (KJD, here).
(a) In the first case, Scottish researchers suggested[10] the following method:

Prions from cow with MCD (P), and prions from man with KJD (R) –
when injected into mice, *produce similar symptoms* (Q) in the latter.
Whence, it is inferred that MCD in cows may well become KJD in man!

This argument may be construed as a 2nd Figure causal syllogism, as follows:

R causes Q (major premise)
P causes Q (minor premise)
P could cause R (putative conclusion).

Such disease transmission would presumably occur when cow meat with MCD prions (P) is eaten by a man, at which point these prions would, either as they are, or after going through slight changes, be KJD prions (R).
That is to say, the conclusion may be considered as being: 'P gets to be or becomes R'; but for our purposes, it suffices to conclude, more vaguely and generally: 'P causes (or may cause) R'.
The formal validity of such an argument depends on the determinations of causation involved in the given premises and putative conclusion[11]. In the strongest mood, **mn/mn/mn**, and in many weaker cases (more than one

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9 I assume I heard them correctly, and they had not overly simplified the scientific information.
10 I heard the suggestion on French TV on 21.12.1999.
11 For the full list of valid and invalid arguments, see *The Logic of Causation*, chapter 6.3.

might expect), we have a valid argument. In some other cases (some of them, quite unexpectedly), no such conclusion is strictly possible (e.g. **m/m** or **n/n**), i.e. the argument is invalid.
Thus, the proposed causative argument is not always valid, not a universal truth; but under the right conditions, it may indeed be valid.
Moreover, we need not always consider the 'P causes R' conclusion as absolute; it suffices sometimes to regard it as merely probable – i.e. as 'P probably (to some degree or other) causes R'.
It should be kept in mind that different causes may have *some* effects in common, without having *all* effects in common. In more extreme cases, the parallel causes of some common effect are not merely different, but even incompatible, i.e. unable to coexist in the same circumstances. Thus, we cannot simply in principle equate all causes of common effects. We may, however, reason from one such cause to another, if we exercise some caution, since the inference is sometimes valid.
(b) The second argument I heard was made by a Zurich scientist[12], who stated, with reference to the prions of MCD, or more precisely of a variant found in rats, and those of KJD, that "the more similar these prions are the more likely is transmission of the disease from animal to man".
This argument could have been intended as equivalent to the preceding, i.e. regarding the similarity between the two kinds of prion as a similarity of their effects. But my impression was that he meant that the prions *constitutionally* resemble each other, i.e. have similar physical structures or chemical compositions, or common components. In that case, using a different set of symbols to avoid confusion, the argument runs as follows:

Certain prions (Y) cause KJD in humans (Z).
Certain other prions (X), known to cause MCD in cows, *constitutionally resemble* the Y prions.
Therefore, X could also cause Z.

Or, in more general, purely symbolic terms, we have:

Y causes Z (major premise)
X resembles Y (minor premise)
Therefore, X probably causes Z (putative conclusion).

Note well the differences between this argument and the one earlier considered. The present argument is a 1st Figure syllogism, whose middle term is one of the causatives (Y). Here, the major premise and putative conclusion are causative propositions, but the minor premise is not per se causative, but about the constitutional resemblance between causatives (X and Y). So this argument is only partly causal in content.
Note moreover that the Zurich scientist argued that *the more X resembles Y, the more probable it is that X causes Z*. Granting the syllogism, this further principle would seem reasonable, since *in the limit, when X and Y are identical, the conclusion would be obvious and necessary*. Indeed, we could use this insight about degrees of resemblance as a source of validity for the proposed mixed-form syllogism.
Another way we might approach this same argument is to suppose that the apparently different causes have some underlying *common factor or character* (say S) to different extents, so that the 'real' cause is one and the same in either case. If this common factor is present to sufficient degree (as in Y, at least), it causes the effect in question (Z); whereas, if its presence is insufficiently strong (as might happen in X), it might not have the same result (i.e. Z). There may be a threshold of some sort for the causative factor to be operative.
Thus, we may consider the proposed argument to proceed more precisely as follows:

Y causes Z; or more precisely, *it is factor S within Y* that causes Z
X resembles Y; or more precisely, *X has factor S (to a comparable degree)*
Therefore, X probably causes Z (putative conclusion).

[12] On Swiss TV, on 4.1.2000.

The probability of the conclusion is then seen to hinge on the quantity of S in X, if this is comparable in potency to the quantity of S in Y. The underlying deduction becomes, in this perspective, *a fortiori* rather than syllogistic. If S in X is sufficient, as S in Y is, the inference is valid. If S in X is insufficient, unlike S in Y, the inference is invalid. When we are not sure which is true, the conclusion is proportionately uncertain.

The common factor or character concerned may be some concrete phenomenon, or it may be something more abstract, that we conceptually assume to justify our making the proposed inference. Such conceptualization of causes is not an arbitrary process, however. It is, or should be, regulated adductively. As Ockham's Razor teaches us, it is not always wise to multiply concepts, *ad nauseam,* without need. The way to tell when it is wise and when it is not, is by trial and error. A common abstract essence may be assumed, and such assumption tested: if it is found true and useful, it is kept on; otherwise, it is abandoned.

Thus, to summarize our findings, here: the Scottish researchers appealed to a standard causative syllogism, whereas the Swiss scientist was using a more complicated mixed-form argument (which taught me, at least, something I had not thought of). Both arguments are sometimes valid, sometimes not; therefore, in cases where we do not have enough data to draw a definite conclusion, we might still on that basis draw a probable conclusion. It should be added that a probable cause conclusion is of course not intended as final. Rather, it serves as an encouragement and guideline for further research.

9. About Negation

1. Negation in Adduction

Concepts and theories are hypothetical constructs. They cannot (for the most part) be proven (definitely, once and for all), but only repeatedly confirmed by experience. This is the positive side of adduction, presenting evidence in support of rational constructs. This positive aspect is of course indispensable, for without some concrete evidence an abstraction is no more than a figment of the imagination, a wild speculation. The more evidence we adduce for it, the more reliable our concept or theory.

But, as Francis Bacon realized, the account of adduction thus far proposed does not do it justice. Just as important as the positive side of providing evidence, is the negative aspect of it, the rejection of hypotheses that make predictions conflicting with experience. As he pointed out, even if a hypothesis has numerous confirmations, it suffices for it to have *one* such wrong prediction for it to be rejected.

Stepping back, this means that the process of adduction is concerned with selection of the most probable hypothesis among two or more (already or yet to be conceived) explanations of fact. Each of them may have numerous 'positive instances' (i.e. empirical evidence that supports it); and so long as they are all still competitive, we may prefer those with the most such instances. But, the way we decisively advance in our conceptual/theoretical knowledge is by the successive *elimination* of propositions that turn out to have 'negative instances' (i.e. empirical evidence against them).

Now all the above is well known and need not be elucidated further. This theory of inductive logic has proven extremely successful in modern times, constituting the foundation of the scientific method.

But upon reflection, the matter is not as simple and straightforward as it seems at first!

Consider, for example, the issue of whether or not there is water on Mars. It would seem that the proposition "There is water on Mars" is far easier to prove inductively than the contradictory proposition "There is no water on Mars". Both propositions are hypotheses.

The positive thesis would be somewhat confirmed, if it was discovered using certain instruments from a distance that there are serious indices that water is present; the thesis would be more solidly confirmed, if a sample of Mars was brought back to Earth and found upon analysis to contain water. In either case, the presence of water on Mars would remain to some (however tiny) degree unsure, because some objection to our instrumental assumptions might later be raised or the sample brought back may later be found to have been contaminated on the way over. Nevertheless, something pretty close to certainty is conceivable in this matter.

The negative thesis, by contrast, is much more difficult to prove by experience. We can readily assume it to the extent that the positive thesis has not so far been greatly confirmed. That is, so long as we have not found evidence for the positive thesis (i.e. water on Mars), we should rather opt for the negative thesis. But the latter is only reliable to the degree that we tried and failed to confirm the former. If we earnestly searched for water every which way we could think of, and did not find any, we can with proportionate confidence assume there is no water.

Thus, in our example, the negative thesis is actually *more difficult* to establish than the positive one. It *depends on a generalization*, a movement of thought from "Wherever and however we looked for water on Mars, ***none was found***" to "***There is no*** water on Mars". However, note well, it remains conceivable that a drop of water be found one day somewhere else on Mars, centuries after we concluded there was none.

Granting this analysis, it is clear that Bacon's razor that "What is important is the negative instance" is a bit simplistic. It assumes that a negative is as accessible as (if not, indeed, more accessible than) a positive, which is not always the case.

In practice, a negative may be inductively more remote than a positive. Granting this conclusion, the question arises – is the negative instance *ever* more empirically accessible than (or even as accessible as) the positive one? That is, *when* does Bacon's formulation of induction actually come into play?

If we look at major historical examples of rejection of theories, our doubt may subsist. For example, Newtonian mechanics was in place for centuries, till it was put in doubt by the discovery of the constancy of the velocity of light (which gave rise to Relativity theory) and later again by the discovery of various subatomic phenomena (which gave rise to Quantum mechanics). In this example, the 'negative instances' were essentially 'positive instances' – the only thing 'negative' about them was just their negation of the Newtonian worldview!

Such reflections have led me to suspect that the 'negation' referred to by Bacon is only meant *relatively* to some selected abstraction. His razor ought not be taken as an advocacy of absolute negation. If we look at the matter more clearly, we realize that the data used to thus negate an idea is essentially positive. A deeper consideration of the nature of negation is therefore patently called for.

2. Positive and Negative Phenomena

People have always considered that there is a difference between a positive and a negative term. Indeed, that is why logicians have named them differently. But logicians have also found it difficult to express that difference substantially. Yet, there are significant phenomenological differences between positive and negative phenomena**.**

a. The concrete material and mental world is evidently composed only of positive particular phenomena, some of which we perceive (whether through the bodily senses or in our minds). These exist at least as appearances, though some turn out to seem real and others illusory. This is an obvious phenomenological, epistemological and ontological truth.

To say of phenomena that they are 'particular' is to express awareness that they are always limited in space and time. They have presence, but they are finite and transient, i.e. manifestly characterized by diversity and change.

> We do not ordinarily experience anything concrete that stretches uniformly into infinity and eternity (though such totality of existence might well exist, and indeed mystics claim to attain consciousness of it in deep meditation, characterizing it as "the eternal present"). We do commonly consider some things as so widespread. 'Existence' is regarded as the substratum of all existents; 'the universe' refers to the sum total of all existents; and we think of 'space-time' as defining the extension of all existents. But only 'existence' may be classed as an experience (a quality found in all existents); 'the universe' and 'space-time' must be admitted as abstractions.

However, the limits of particulars are perceivable without need of negation of what lies beyond them, simply due to the variable concentration of consciousness, i.e. the direction of focus of attention. That is, though 'pointing' to some positive phenomenon (e.g. so as to name it) requires some negation (we mean "this, but not that"), one can notice the limits of that phenomenon independently of negation.

b. Negative phenomena (and likewise abstracts, whether positive or negative), on the other hand, do depend for their existence on a Subject/Agent – a cognizing 'person' (or synonymously: a self or soul or spirit) with consciousness and volition looking out for some remembered or imagined positive phenomenon and failing to perceive it (or in the case of abstracts, comparing and contrasting particulars).

Thus, negative particular phenomena (and more generally, abstracts) have a special, more 'relative' kind of existence. They are not as independent of the Subject as positive particular phenomena. That does not mean they are, in a Kantian sense, 'a priori' or 'transcendental', or purely 'subjective' – but it does mean that they are ontological potentials that are only realized in the context of (rational) cognition.

Another kind of experience is required for such realization – the self-experience of the Subject, his intuitive knowledge of his cognitions and volitions. This kind of experience, being immediate, may be positive or negative without logical difficulty. The Subject reasons inductively as follows:

> I am searching for X;
> *I do not* find X;
> Therefore, X "*is not"* there.

The negative conclusion may be 'true' or 'false', just like a positive perception or conclusion. It is true to the degree that the premises are true – i.e. that the alleged search for X was diligent (intelligent, imaginative, well-organized, attentive and thorough), and that the alleged failure to find X is not dishonest (a lie designed to fool oneself or others).

Whence it is fair to assert that, unlike some positive terms, negative terms are never based *only* on perception; they *necessarily* involve a thought-process – the previous mental projection or at least intention of the positive term they negate.

This epistemological truth does reflect an ontological truth – the truth that the 'absences' of phenomena lack phenomenal aspects. A 'no' is not a sort of 'yes'.

Note well the logical difference between '**not perceiving X**' and '**perceiving not X**'. We do not have direct experience of the latter, but can only indirectly claim it by way of *inductive inference* (or extrapolation) from the former. In the case of a positive, such process of reasoning is not needed – one often can and does 'perceive X' directly.

Suppose we draw a square of opposition for the propositions (labeling them by analogy to standard positions) – "I perceive X" (A), "I do not perceive not X" (I), "I perceive not X" (E), "I do not perceive X" (O). Here, the A form is knowable by experience, whereas the I form is knowable perhaps only by deductive implication from it. On the negative side, however, the E form is not knowable by experience, but only by inductive generalization from the O form (which is based on experience).

3. Positive Experience Precedes Negation

Negation is a pillar of both deductive and inductive logic, and requires careful analysis. We have to realize that negative terms are fundamentally distinct from positive ones, if we are to begin fathoming the nature of logic. The following observation seems to me crucial for such an analysis:

> ***We can experience something positive without having first experienced (or thought about) its negation, but we cannot experience something negative without first thinking about (and therefore previously having somewhat experienced) the corresponding positive.***

a. Cognition at its simplest is perception. Our perceptions are always *of positive particulars*. The contents of our most basic cognitions are phenomenal sights, sounds, smells, tastes, and touch and other bodily sensations that seemingly arise through our sense organs interactions with matter – or mental equivalents of these phenomena that seemingly arise through memory of sensory experiences, or in imaginary recombinations of such supposed memories.

A positive particular can be experienced directly and passively. We can just sit back, as it were, and receptively observe whatever happens to come in our field of vision or hearing, etc. This is what we do in meditation. We do not have to actively think of (remember or visualize or conceptualize) something else in order to have such a positive experience. Of course, such observation may well in practice be complicated by thoughts (preverbal or verbal) – but it is possible in some cases to have a pure experience. This must logically be admitted, if concepts are to be based on percepts.

b. In the case of *negative particulars*, the situation is radically different. A negative particular has *no* specific phenomenal content, but is *entirely* defined by the 'absence' of the phenomenal contents that constitute some positive particular. If I look into my material or mental surroundings, I will always see present phenomena. The absence of some phenomenon is only noticeable if we first think of that positive phenomenon, and wonder whether it is present.

It is accurate to say that our finding it absent reflects an empirical truth or fact – but it is a fact that we simply would not notice the negative without having first thought of the positive. Negative knowledge is thus necessarily (by logical necessity) more indirect and active. It remains (at its best) perfectly grounded in experience – but such negative experience requires a rational process (whether verbal or otherwise).

To experience a negative, I must first imagine (remember or invent) a certain positive experience; then I must look out and see (or hear or whatever) whether or not this image matches my current experience; and only then (if it indeed happens not to) can I conclude to have "experienced" a negative.

Thinking about X may be considered as positioning oneself into a vantage point from which one can (in a manner of speaking) experience not-X. If one does not first place one's attention on X, one cannot possibly experience the negation of X. One may well experience all sorts of weird and wonderful things, but not specifically not-X.

From this reflection, we may say that whereas affirmatives can be experienced, negatives are inherently rational acts (involving imagination, experience and intention). A negative necessarily involves thought: the thought of the corresponding positive (the imaginative element), the testing of its presence or absence (the experiential element) and the rational conclusion of "negation" (the intentional element).

c. The negation process may involve words, though it does not have to.

Suppose I have some momentary experience of sights, sounds, etc. and label this positive particular "X". The *content of consciousness* on which I base the term X is a specific set of positive phenomenal experiences, i.e. physical and/or mental percepts. Whenever I can speak of this X, I mentally *intend* an object of a certain color and shape that moves around in certain ways, emitting certain sounds, etc.

Quite different is the negation of such a simple term, "not X". The latter is not definable by any specific percepts – it *refers to no perceptible qualities*. It cannot be identified with the positive phenomena that happen to be present in the absence of those constituting X. Thus, strictly speaking, not-X is only definable by 'negation' of X.

Note well, it would not be accurate to say (except ex post facto) that not-X refers to all experiences other than X (such as Y, Z, A, B, etc.), because when I look for X here and now and fail to find it, I am only referring to present experience within my current range and not to all possible such experiences. We would not label a situation devoid of X as "not X" *without thinking of X*; instead, we would label that situation in a positive manner (as "Y", or "Z", or whatever).

Thus, we can name (or wordlessly think of) something concrete "X", *after* experiencing phenomena that constitute it; but in the case of "not-X", we necessarily conjure the name (or a wordless thought) of it *before* we experience it.

"Not-X" is thus already a concept rather than a percept, even in cases where "X" refers to a mere percept (and all the more so when "X" itself involves some abstraction – as it usually does). The concept "not X" is hypothetically constructed first and then confirmed by the attempted and failed re-experience of X.

In short, negation – even at the most perceptual level – involves an adductive process. It is never a mere experience. A negative term never intends the simple perception of some negative thing, but consists of a hypothesis with some perceptual confirmation. Negation is always conceptual as well as perceptual in status.

A theory cannot be refuted before it is formulated – similarly, X cannot be found absent unless we first think of X.

4. Negation is an Intention

Now, there is no specific phenomenal experience behind the word "not". Negation has no special color and shape, or sound or smell or taste or feel, whether real or illusory! What then is it? I suggest the following:

Negation as such refers to a 'mental act' – or more precisely put, it is an act of volition (or more precisely still, of velleity) by a Subject of consciousness. Specifically, *negation is an intention*. Note that our will to negate is itself *a positive act*, even though our intention by it is to negate something else.

Negation does express an experience – the 'failure' to find something one has searched for. Some cognitive result is willfully pursued (perception of some positive phenomenon), but remains wanting (this experience is qualitatively a suffering of sorts, but still a positive intention, note) – whence we mentally (or more precisely, by intention) mark the thing as 'absent', i.e. we construct an idea of 'negation' of the thing sought.

Thus, negation is *not a phenomenon* (a physical or mental percept), *but something intuited* (an event of will within the cognizing Subject). 'Intuition' here, note well, means the self-knowledge of the Subject of consciousness and Agent of volition. This is experience of a *non-phenomenal* sort. Such self-experience is immediate: we have no distance to bridge in space or time.

When a Subject denies the presence of a material or mental phenomenon, having sought for it in experience and not found it – the 'denial' consists of a special act of intention. This intention is what we call 'negation' or 'rejection of a hypothesis'. It occurs in the Subject, though it is about the Object.

This intention is not however an arbitrary act. If it were, it would be purely subjective. This act (at its best) remains sufficiently dependent on perception to be judged 'objective'. The Subject must still look and see whether X is present; if that positive experience does not follow his empirical test, he concludes the absence of X.

Indeed, an initial negation may on closer scrutiny be found erroneous, i.e. we sometimes think something is 'not there' and then after further research find it on the contrary 'there'. Thus, this theory of negation should not be construed as a claim that our negating something makes it so. Negation is regulated by the principles of adduction – it is based on appearance that is credible so long as confirmed, but may later be belied.

We can ex post facto speak of an objective absence, but we cannot fully define 'absence' other than as 'non-presence', and the 'non-' herein is not a phenomenon but an intention. The 'absence' is indeed experienced, but it is *imperceptible* without the Subject posing the prior question 'is X present?'

Absence, then, is not produced by the Subject, but is made perceptible by his vain search for presence. For, to repeat, not-X is not experienced as a specific content of consciousness – but as a continuing failure to experience the particular positive phenomena that define X for us.

Although we are directly only aware of apparent existents, we can inductively infer non-apparent existents from the experience that appearances come and go and may change. On this basis, we consider the categories 'existence' and 'appearance' as unequal, and the former as broader than the latter. Similarly, we inductively infer 'objective absence' from 'having sought but not found', even though we have no direct access to former but only indirect access by extrapolation from the latter. Such inference is valid, with a degree of probability proportional to our exercise of due diligence.

For these reasons, I consider the act of negation as an important key to understanding the nature and status of logic. Negation is so fundamental to reason, so crucial an epistemic fact, that it cannot be reduced to something else.

We can describe it *roughly* as an intention to 'cross-off' (under the influence of some reason or other) the proposed item from our mental list of existents. But this is bound to seem like a circular definition, or a repetition of same using synonyms. It is evident that *we cannot talk about negation without engaging in it*. Thus, we had better admit the act of negation as a primary concept for logical science.

> Note in passing: the present theory of negation provides biology with an interesting distinction regarding rational animals.
>
> Sentient beings without this faculty of negation can only respond to the present, whereas once this faculty appears in an organism (as it did in the human species) it can mentally go beyond the here and now. A merely sensory animal just reacts to current events, whereas a man can fear dangers and prepare for them.
>
> Once the faculty of negation appears, the mind can start *abstracting, conceiving alternatives and hypothesizing*. Memory and imagination are required to project a proposed positive idea, but the intent to negate is also required to reject inadequate projections. Without such critical ability, our fantasies would quickly lead us into destructive situations.

5. Formal Consequences

Returning to logic – our insight here into the nature of negation can be construed to have *formal* consequences. The negative term is now seen to be a radically different kind of term, even though in common discourse it is made to behave like any other term.

We cannot point to something as 'negative' except insofar as it is the negation of something positive. This remark is essentially logical, not experiential. The term 'not' has no substance per se – it is a purely relative term. The positive must be experienced or thought of before the negative can at all be conceived, let alone be specifically sought for empirically. This is as true for intuitive as for material or mental objects; and as true for abstracts as for concretes.

One inference to draw from this realization of the distinction of negation is: "non-existence" is not some kind of "existence". Non-existent things cannot be classed under existence; they are not existent things. The term "non-existence" involves no content of consciousness whatsoever – it occurs in discourse only as the verbal repository of any and all denials of "existence". Existentialist philosophers have written volumes allegedly about "non-being", but as Parmenides reportedly stated:

"You cannot know not-being, nor even say it."

This could be formally expressed and solidified by saying that ***obversion*** (at least that of a negative – i.e. inferring "This is nonX" from "This is not X") is essentially an artificial process. If so, the negative predicate (nonX) is not always inferable from the negative copula (is not). In other words, the form "There is no X" does not imply "There is non-X"; or conversely, "X does not exist" does not imply "nonX exists".

We can grant heuristically that such eductive processes work in most cases (i.e. lead to no illogical result), but they may be declared invalid in certain extreme situations (as with the term "non-existence")! In such cases, "nonX" is 'just a word'; it has no conscionable meaning – we have no specific thing in mind as we utter it.

Logicians who have not yet grasped the important difference of negation are hard put to explain such formal distinctions. I know, because it is perhaps only in the last three years or so that this insight about negation has begun to dawn on me; and even now, I am still in the process of digesting it.

> Note that a philosophical critic of this view of negation cannot consider himself an objective onlooker, who can hypothesize 'a situation where absence exists but has not or not yet been identified'. For that critic is himself a Subject like any other, who must explain the whence and wherefore of his knowledge like anyone else – including the negatives he appeals to. No special privileges are granted.
>
> That is, if you wish to deny all the above, ask yourself and tell me how you consider you go about denying without having something to deny! Claiming to have knowledge of a negative without first thinking of the corresponding positive is comparable to laying personal claim to an absolute framework in space-time – it is an impossible exercise for us ordinary folk.

It should also be emphasized that the above narrative describes only the simplest kind of negation: negation of a perceptual item. But most of the time, in practice, we deal with far more complex situations. Even the mere act of 'pointing' at some concrete thing involves not only a positive act ("follow my finger to this"), but also the act of negation ("I do not however mean my finger to point at that").

Again, a lot of our conceptual arsenal is based on imaginary recombinations of empirical data. E.g. I have seen "pink" things and I have seen "elephants", and I wonder whether "pink elephants" perhaps exist. Such hypothetical entities are then tested empirically, and might be rejected (or confirmed). However, note, abstraction does not depend only on negation, but on quantitative judgments (comparing, and experiencing what is more or less than the other).

Abstraction starts with experiences. These are variously grouped through comparisons and contrasts. Negation here plays a crucial role, since to group two things together, we must find them not only similar to each other but also different from other things. This work involves much trial and error.

But at this level, not only denial but also affirmation is a rational act. For, 'similarity' means seemingly having some quality in common in some measure, although there are bound to be other qualities not in common or differences of measure of the common quality. The essence of affirmation here is thus 'measurement'.

But Nature doesn't measure anything. Every item in it just is, whatever it happens to be (at any given time and place). It is only a Subject with consciousness that measures: this against that, or this and that versus some norm.

This weighing work of the cognizing Subject is not, however, arbitrary (or ought not to be, if the Subject has the right attitudes). As in the above case of mere negation, the conclusion of it does proceed from certain existing findings. Yet, it is also true that this work only occurs in the framework of cognition.

6. Negation and the Laws of Thought

Logic cannot be properly understood without first understanding negation. This should be obvious from the fact that two of the laws of thought concern the relation between positive and negative terms. Similarly, the basic

principle of adduction, that hypotheses we put forward should be empirically tested and rejected if they make wrong predictions – this principle depends on an elucidation of negation.

a. The so-called laws of thought are, in a sense, laws of the universe or ontological laws – in that the universe is what it is (identity), is not something other than what it is (non-contradiction) and is something specific (excluded middle).

They have phenomenological aspects: appearances appear (identity); some are in apparent contradiction to others (a contradiction situation); in some cases, it is not clear just what has appeared (an excluded middle situation).

They may also be presented as epistemological laws or laws of logic, in that they guide us in the pursuit of knowledge. However, they are aptly named laws of thought, because they really arise as propositions only in the context of cognitive acts.

To understand this, one has to consider the peculiar status of negation, as well as other (partly derivative) major processes used in human reasoning, including abstraction, conceiving alternative possibilities and making hypotheses.

b. The impact of this insight on the laws of thought should be obvious. The law of identity enjoins us primarily to take note of the *positive* particulars being perceived. But the laws of non-contradiction and of the excluded middle, note well, both involve *negation*. Indeed, that's what they are all about – their role is precisely *to regulate our use of negation* – to keep us in harmony with the more positive law of identity!

Their instructions concerning the subjective act of negation, at the most perceptual level, are as follows. The law of non-contradiction ***forbids negating in the perceptible presence of the thing negated***. The law of the excluded middle ***forbids accepting as final an uncertainty as to whether a thing thought of is currently present or absent***.

We are unable to cognize a negative (not-X) except by negation of the positive (X) we have in mind; it is therefore absurd to imagine a situation in which both X and not-X are true (law of non-contradiction). Similarly, if we carefully trace how our thoughts of X and not-X arise in our minds, it is absurd to think that there might be some third alternative between or beyond them (law of the excluded middle.)

Thus, these two laws are not arbitrary conventions or happenstances that might be different in other universes, as some logicians contend (because they have unfortunately remained stuck at the level of mere symbols, "X" and "non-X", failing to go deeper into the cognitive issues involved). Nor are they wholly subjective or wholly objective.

These laws of thought concern the interface of Subject and Object, of consciousness and existence – for any Subject graced with rational powers, i.e. cognitive faculties that go beyond the perceptual thanks in part to the possibility of negation.

They are for this reason applicable universally, whatever the content of the material and mental universe faced. They establish for us *the relations* between affirmation and denial, for any and every content of consciousness.

c. On this basis, we can better comprehend the ontological status of the laws of thought. They have no actual existence, since the concrete world has *no use for or need* of them, but exists self-sufficiently in positive particulars.

But the laws are a potential of the world, which is actualized when certain inhabitants of the world, who have the gifts of consciousness and freewill, resort to negation, abstraction and other cognitive-volitional activities, in order to summarize and understand the world.

In a world devoid of humans (or similar Subject/Agents), there are no negations and no 'universals'. Things just are (i.e. appear) – positively and particularly. Negation only appears in the world in relation to beings like us who can search for something positive and not find it. Likewise for 'universals' – they proceed from acts of comparison and contrast.

Consciousness and volition are together what gives rise to concepts and alternative possibilities, to hypotheses requiring testing. It is only in their context that logical issues arise, such as existence or not, reality or illusion, as well as consistency and exhaustiveness.

It is important to keep in mind that the laws of thought are themselves complex abstractions implying negations – viz. the negative terms they discuss, as well as the negation of logical utility and value in contradictory or 'middle' thinking. Indeed all the 'laws' in our sciences are such complex abstractions involving negations.

d. The insight that negation is essentially a volitional act allied to cognition explains why the laws of thought are prescriptive as well as descriptive epistemological principles.

The laws of thought are prescriptive inasmuch as human thought is fallible and humans have volition, and can behave erratically or maliciously. If humans were infallible, there would be no need for us to study and voluntarily use such laws. There is an ethic to cognition, as to all actions of freewill, and the laws of thought are its top principles.

The laws of thought are descriptive, insofar as we commonly explicitly or implicitly use them in our thinking. But this does not mean we all always use them, or always do so correctly. They are not 'laws' in the sense of reports of universal behavior. Some people are unaware of them, increasing probabilities of erroneous thinking. Some people would prefer to do without them, and eventually suffer the existential consequences. Some people would like to abide by these prescriptions, but do not always succeed.

These prescriptions, as explicit principles to consciously seek to abide by, have a history. They were to our knowledge first formulated by a man called Aristotle in Ancient Greece. He considered them to best describe the cognitive behavior patterns that lead to successful cognition. He did not invent them, but realized their absolute importance to human thought.

Their justification is self-evident to anyone who goes through the inductive and deductive logical demonstrations certain logicians have developed in this regard. Ultimately it is based on a holistic consideration of knowledge development.

Our insights here about the relativity of negation and abstraction, and the realization of their role in the laws of thought serve to further clarify the necessity and universality of the latter.

7. Pure Experience

A logically prior issue that should perhaps be stressed in this context is the existence of pure experience, as distinct from experience somewhat tainted by acts of thought.

Some philosophers claim that all alleged 'experience' falls under the latter class, and deny the possibility of the former. But such skepticism is clearly inconsistent: if we recognize some *part* of some experience as pure of thought, this is sufficient to justify a claim to *some* pure experience. Thus, the proposition "There are some pure experiences" may be taken as an axiom of logic, phenomenology, epistemology and ontology. This proposition is self-evident, for to deny it is self-contradictory.

Note that this proposition is more specific than the more obvious "There are experiences". Denial of the latter is a denial of the evidence before one's eyes (and ears and nose and tongue and hands, etc. – and before one's "mind's eye", too): it directly contravenes the law of identity. Philosophers who engage in such denial have no leg to stand on, anyway - since they are then hard put to at all explain what meaning the concepts they use in their denial might possibly have. We have to all admit *some* experience – some appearance in common (however open to debate) – to have anything to discuss (or even to be acknowledged to be discussing).

Let us return now to the distinction between pure and tainted experiences. This concerns the involvement of thought processes of any kind – i.e. of ratiocinations, acts of reason. To claim that there are pure experiences is not to deny that some (or many or most) experiences are indeed tainted by conceptual activity (abstraction, classification, reasoning, etc.)

We can readily admit that all of us very often have a hard time distinguishing pure experience from experience mixed with rational acts. The mechanisms of human reason are overbearing and come into play without asking for our permission, as is evident to anyone who tries to meditate on pure experience. It takes a lot of training to clearly distinguish the two in practice.

But surely, any biologist would admit that lower animals, at least, have the capacity to experience without the interference of thought, since they have no faculty of thought. The same has to be true to some extent for humans – not only in reflex actions, but also in the very fact that reasoning of any sort is only feasible in relation to pre-existing non-rational material. To process is to process something.

I have already argued that what scientists call 'experiment' cannot be regarded as the foundation of science, but must be understood as a mix of intellectual (and in some cases, even physical acts) and passive observation (if only observation of the results of experiment displayed by the detection and measuring instruments used). Thus, observation is cognitively more fundamental than experiment.

Here, my purpose is to emphasize that perceptual 'negation' is also necessarily a mix of pure experience and acts of the intellect. It is never pure, unlike the perception of positive particulars (which sometimes is pure, necessarily) – because it logically cannot be, since to deny anything one must first have something in mind to deny (or affirm).
Thus, negation can be regarded as one of the most primary acts of reason – it comes before abstraction, since the latter depends to some extent on making distinctions, which means on negation.

8. Consistency is Natural

It is important to here reiterate the principle that *consistency is natural*; whereas inconsistency is exceptional.
Some modern logicians have come up with the notion of "proving consistency" – but this notion is misconceived. Consistency is the natural state of affairs in knowledge; it requires no (deductive) proof and we are incapable of providing such proof, since it would be 'placing the cart before the horse'. The only possible 'proof' of consistency is that no inconsistency has been encountered. Consistency is an inductive given, which is very rarely overturned. All our knowledge may be and must be assumed consistent, unless and until there is reason to believe otherwise.
In short: harmony generally reigns unnoticed, while conflicts erupt occasionally to our surprise. One might well wonder now if this principle is itself consistent with the principle herein defended that negatives are never per se objects of cognition, but only exist by denial of the corresponding positives. Our principle that consistency is taken for granted seems to imply that we on occasion have logical insights of *in*consistency, something negative!
To resolve this issue, we must again emphasize the distinction between pure experience and the *interpretations* of experience that we, wordlessly (by mere intention) or explicitly, habitually infuse into our experiences. Generally, almost as soon as we experience something, we immediately start interpreting it, dynamically relating it to the rest of our knowledge thus far. Every experience almost unavoidably generates in us strings of associations, explanations, etc.
The contradictions we sometimes come across in our knowledge do not concern our pure experiences (which are necessarily harmonious, since they in fact exist side by side – we might add, quite 'happily'). *Our contradictions are necessarily contradictions between an interpretation and a pure experience, or between two interpretations*. Contradictions do not, strictly speaking, reveal difficulties in the raw data of knowledge, but merely in the hypotheses that we conceived concerning such data.
Contradictions are thus to be blamed on reason, not on experience. This does not mean that reason is necessarily faulty, but only that it is fallible. Contradictions ought not be viewed as tragic proofs of our ignorance and stupidity – but as helpful indicators that we have misinterpreted something somewhere, and that this needs reinterpretation. These indicators are precisely one of the main tools used by the faculty of reason to control the quality of beliefs. The resolution of a contradiction is just new interpretation.
How we know that two theories, or a theory and some raw data, are 'in contradiction' with each other is a moot question. We dismiss this query rather facilely by referring to "logical insight". Such insight is partly 'experiential', since it is based on scrutiny of the evidence and doctrines at hand. But it is clearly not entirely empirical and involves abstract factors. 'Contradiction' is, after all, an abstraction. I believe the answer to this question is largely given in the psychological analysis of negation.

There is an introspective sense that *conflicting intentions* are involved. Thus, the 'logical insight' that there is inconsistency is not essentially insight into a negative (a non-consistency), but into a positive (the intuitive experience of conflict of intentions). Although the word inconsistency involves a negative prefix, it brings to mind something empirically positive – a felt tension between two theses or a thesis and some data.
For this reason, to say that 'consistency is assumable, until if ever inconsistency be found' is consistent with our claim that 'negations are not purely empirical'. (Notice incidentally that we did not here "prove" consistency, but merely *recovered* it by clarifying the theses involved.)

The above analysis also further clarifies how the law of non-contradiction is expressed in practice. It does not sort out experiences as such, but concerns more abstract items of knowledge. To understand it fully, we must be aware of the underlying intentions. A similar analysis may be proposed to explain the law of the excluded middle.
In the latter case, we would insist that (by the law of identity) 'things are something, what they are, whatever that happen to be'. Things cannot be said to be *neither* this *nor* the negation of this, because such characterizations are negative (and, respectively, doubly negative) – and therefore cannot constitute or be claimed as positive experience. Such situations refer to uncertainties *in the knower*, which he is called upon to eventually fill-in. They cannot be proclaimed final knowledge (as some modern sophists have tried to do), but must be considered temporary postures in the pursuit of knowledge.

9. Status of the Logic of Causation

It should be pointed out that the theory of negation here defended has an impact on our theory of causation. If causation relates to the conjunctions *and non*-conjunctions of presences *and absences* of two or more items – then our knowledge of causes (i.e. causatives) is subsidiary to judgments of negation. It follows that ***the logic of causation is not "purely empirical",*** but necessarily involves acts of reason (namely the acts of negation needed to declare something absent or two or more things not conjoined).
Incidentally, we can also argue that causative judgments are not purely empirical with reference to the fact that it always concerns *kinds* of things rather than individual phenomena. Truly individual phenomena are by definition unrepeated and so cannot strictly be said to be present more than once, let alone said to be absent. Causation has to do with *abstractions* – it is conceptual, it concerns classes of things. In this regard, too, causation depends on rational acts.
These features of causation do not make it something non-existent, unreal or invalid, however. The skeptic who tries to make such a claim is also engaged in negation and abstraction – and is therefore implicitly suggesting his own claim to be non-existent, unreal or invalid! One cannot use rational means to deny reason. It is obviously absurd to attempt such intellectual convolutions, yet many have tried and keep trying.
The polemics of Nagarjuna and David Hume are examples of such sophism. As I have shown in previous writings, they try to deny causation without even defining it properly (and likewise for other rational constructs). This is a case of the fallacy I have identified more generally in the present reflections – namely, *the attempt to deny something before one even has something to deny*. What are they disputing if indeed there is nothing to discuss?

> As we have seen, awareness of the distinctiveness of negative terms can have consequences on logical practice. Generally speaking, a negative term (i.e. one contradicting a positive term) is more naturally a predicate rather than a subject of (categorical) propositions. Similarly, the negation of a proposition is more naturally a consequent than an antecedent.
>
> Using a negative term as a propositional subject is sometimes a bit artificial, especially if the proposition is general. When we so use a negative term, we tacitly understand that a set of alternative contrary positive terms underlie it. That is to say, given "All non-A are B", we should (and often do) look for disjuncts (say C, D, E, etc.) capable of replacing non-A.
>
> In the case of a causative proposition, the positive side of the relation may be more effective than the negative side, even when the latter is the stronger. That is, when the causative seems on the surface to be a negation, we should (and often do) look deeper for some positive term(s) as the causative.
>
> This recommendation can only, however, be considered heuristic. Formal rules remain generally valid.

10. Zero, One and More

Another consequence of the theory of negation has to do with the foundations of **mathematics**. What is the number 'zero' (0)? It refers to the 'absence' of units of some class in some domain. And of course, we can here

reiterate that there is no possibility of concretely identifying such absence, without having first sought out the presence of the units concerned. Therefore, here too we can say that there is a sort of relativity to a Subject/Agent (who has to seek out and not find a certain kind of unit).
But of course, not only zero is 'relative' in this sense. We could say that the only purely empirical number is the unit, one (1). It is the only number of things that can be perceived directly, without processing information. As we said earlier, there are only positive particulars. We may here add: each of them is 'only a unit', never 'one of many'.

Such units may be mentally (verbally or even just intentionally) grouped together, by means of some defining rule (which may just be a circle drawn in the dust around physical units, or a more abstract common and exclusive characteristic). We thus form natural numbers larger than one (such as 2, 3, etc.) *by abstraction*. It follows that any number larger than one (as in the case of zero) can be actualized *only if there is someone there to do the counting*.

Thus, zero and the natural numbers larger than one are less directly empirical than the unit; they are conceptual constructs. It still remains true that '2+2 = 4' or false that '2+2 = 5' – but we do not get to know such truth or falsehood just by 'looking' out at the world: a rational process (partly inductive, partly deductive) is required of us. If no one with the needed cognitive powers was alive, only units would actually exist – other numbers would not appear.

And if this dependence on someone counting is true of whole numbers, it is all the more true of fractions, decimals and even more abstract numerical constructs (e.g. imaginary numbers). As for 'infinity', it is obviously the most abstract of numerical constructs – considering, too, the negativity it involves by definition.

But we can go one step further in this analysis, and reexamine our above notion of a purely empirical unit! Implicit in this notion is that what appears before us (in the various sensory media, and their mental equivalents) is a multiplicity of distinct units. This already implies plurality – the existence of many bits and pieces in a given moment of appearance (different shapes, colors, sounds, etc.), and/or the existence of many moments of appearance (across 'time', as suggested by 'memory').

But multiplicity/plurality does not appear before us through mere observation. It is we (those who are conscious of appearances) who 'sort out' the totality of appearance into distinct bits and pieces (e.g. physical or mental, or sights and sounds, or blue and white), or into present phenomena and memories of phenomena. We do this by means of intentions and mental projections (acts of will, sometimes involving imagination), in an effort to summarize and 'make sense of' the world we face.

Thus, to speak of 'positive particulars' as pure percepts (or in some cases, as objects of intuition) is not quite accurate as phenomenology. The starting data of all knowledge is a *single* undifferentiated mass of all our experience. This is split up and ordered in successive stages.

> Consider my field of experience at a given moment – say, for simplicity, I look up and see a solitary bird floating in the blue sky, i.e. two visual objects (ignoring auditory and other phenomenal features), call them x and y.
> Initially (I postulate), they are one experience. Almost immediately, however, they are distinguished from each other (I postulate this true even for a static moment[1], but it is all the more easy to do as time passes and the bird flies through different parts of the sky, and other birds and clouds come into the picture).
> This basic distinction is based on the fact that the bird has a shape and color that visually 'stand out' from the surrounding blue of the sky, i.e. by virtue of contrast. This may called '**imagined separation**', and involves a mental projection (or at least, an intention) of imaginary boundaries between the things considered.

[1] Of course, the observer of the static moment *takes time* to make a distinction between items within it. But there is no inconsistency in our statement, since we are not claiming our world as a whole to be static but merely mentally considering a static moment within it.

It need not (I again postulate) involve negations. That is, I make a distinction because x is x and y is y, not because x is not-y and y is not-x. The latter negations can only logically occur *as an afterthought*, once the former contrasts give me separate units I can negate.

The acknowledgment of 'many' things within the totality of experience (a sort of epistemological initial 'big bang') is already a stage of ratiocination. Negation is yet another of those stages, occurring perhaps just a little after that. Numbers are yet a later stage, dependent on negation (since to explicitly distinguish things from each other we need negation).

By the way, the arising of multiplicity does not only concern external objects; we must also take into consideration the Cartesian *cogito ergo sum*. This refers to the development of successive pluralities relating to the psyche, notably:

- Cognized and cognizing, and also cognition; thus, Subject – consciousness – Object.
- Self and other; or further, soul/spirit, mind, body and the rest of the world (the latter also spiritual, mental and material/physical).[2]

Everything beyond the totality of experience depends on *judgment*, the cognitive activity we characterize as rational. Such judgment exists in varying amounts in humans. It also seems to exist to a lesser degree in higher animals (since they search for food or look out for predators, for instances), and even perhaps a little in the lowest forms of sentient life (though the latter seem to function almost entirely by reflex).[3]

11. Psychology of Negation

With regard to **psychology**, the following may be added. Knowing when and how to negate is an art – on which depends the pertinence and accuracy of our judgments. The faculty of negation can be abused or underused.

Psychologists will agree that excessive negation, as excess in any intellectual endeavor, can be considered a mental sickness. People with excessive negativity have a negation faculty that has gone haywire, causing them and others much suffering. But lack of critical sense – excessive credulity and enthusiasm – can also mislead and cause harm.

Sober judgment relies on poise and restraint either way – i.e. it is appropriately balanced.

12. Negation in Meditation

I have found in the course of **meditation** that effective awareness that all pure perception relates to positive particular phenomena, and that negation is always partly an act of reason, has a powerful concentrating effect due to eliminating at its root much underlying thought (which uselessly diverts our attention from 'the here and now' of positive particulars). If negations are not pure experiences, they can and ought to be treated as (expendable) thoughts by the meditator.

If negations involve thought, the same is all the more true of abstractions (which are all derivatives of negation), including explanations, calculations and other rational judgments. However, in the latter cases, meditators are usually well aware that thinking is involved and try their best to avoid it. Whereas, in the case of negations, one is

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[2] The distinction between internal and external objects varies with context, of course. 'Internal' may refer to spiritual intuitions (own cognitions, own volitions, own appraisals, and self), mental phenomena (memories, mental projections, emotions), or bodily phenomena (sensations and visceral sentiments). 'External' then means, respectively, phenomena in one's own mind-body and beyond, or only those in one's body and beyond it, or again only the world outside one's body.

[3] A good argument in favor of this thesis, that mental separation and negation are distinct stages of distinction, is the possibility it gives us (i.e. biology) of supposing that lower animals are aware of multiplicity but unable to negate (because the latter requires a more pronounced level of imagination).

more easily fooled into believing that they are mere experiences and tend to tolerate them and get absorbed in them.

> In this context, parenthetically, I am tempted to ask the question: if the Buddhist enlightenment experience is – as some seem to suggest – a contemplation of "emptiness", is it a pure experience (as they claim) or an inference from experience? For the concept of emptiness (absence of content) here refers to denial of ultimate essences (which are described as "self-nature" or "self-existence") behind the particular appearances of experience; but if such denial involves negation, and negation here strictly means 'essence has not been found' rather than 'non-essence has been found', the latter conclusion is only an extrapolation from the former.

One way to avoid negation, and indeed other forms of judgment, in meditation is simply to abstain from asking questions and seeking answers (confirmations, refutations, or details of any sort). This promotes a more passive and receptive frame of mind, which generates inner calm and silence.[4]

It may be objected that such an attitude is not conducive to philosophical – and more broadly, knowledge – development! But in fact, although one cannot progress far in meditation if one considers it as merely a means to philosophical or other ends, the practice of meditation does improve one's philosophical insight and understanding, and knowledge generally. (And indeed, the converse is also true – philosophy can help improve one's meditation.)

[4] Note that this might only concern *zazen* and similar methods of meditation. In certain other meditations, the mind is deliberately kept active and searching; for instance (according to D.T. Suzuki), masters of meditation on a *koan* recommend cultivation of a "spirit of inquiry".

10. Jewish Logic: A Brief History and Evaluation

This essay was first written in 1990 in Canada, then completely revised in 1995 in Switzerland.

1. Introduction

All comparative and historical studies are likely to deepen and enrich our understanding of logic in general. Reading the article on 'The History and Kinds of Logic', in the *New Encyclopaedia Britannica*[1], one is struck by the total absence of any mention of Hebrew, Israelite, Talmudic, Rabbinic, Judaic or Jewish contribution to logic before modern times, except for a mention of 13th century logician Isaac Albalag. Since Jewish (religious) literature, notably the Torah and subsequent books of the Bible, was highly developed many centuries before the advent of Greek philosophical literature, one may well wonder to what extent the former deserves to be ignored by historians of logic.

Indeed, the said *NEB* article itself admits that the Western view of the history of logic may be biased by limited access to sources in other cultures. I quote[2]:

> Judging from the outline of the development of logic given so far, it would appear that logic has been an exclusive product of Western culture. Some historians of the subject, however, have found this view parochial and sought to identify traces of logic in Indian and Chinese thought. But research in these two fields is beset with tremendous difficulties: most of the texts remain unpublished or untranslated; some of the monographs are unreliable; and scholars well trained both in logic and philology are extremely rare. Thus, a fair evaluation is, as yet, impossible.

The same difficulties and barriers beset historians, who wish to trace logic history more globally, with regard to Judaic logic. The Talmud, in particular, is a dense and complicated document, written in Hebrew and Aramaic, not accessible to all comers.

To begin answering our question, we must first distinguish between the art or actual practice of logic, and the science of or theorizing about logic. This distinction applies equally well to individuals and whole cultures. So our question is really two-fold: as of when is there evidence of logical thought in Jewish culture, and when did Jews begin reflecting on their own thought processes? Another, equally important, issue is: how extensive and how good were their logic practice and theory?

It is clear that such questions could and should be asked in relation to any culture, not just Jewish culture; but we will make this a case study of sorts (as the topic happens to have aroused the author's personal interest!). Furthermore, we need to study the mutual influences, if any, between cultures: who taught what aspects of logic to whom? In this regard, we may refer, on the one hand, to obvious, manifest influences, one way or the other, and on the other hand, to subterranean, assumable influences. The media often misplace credit and attribute innovations to imitators. Here, a reflection is called for, concerning the methodology appropriate to historical studies, which involve peculiar difficulties.

We cannot, of course, in a brief essay, hope to solve all these problems.

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1 *The New Encyclopaedia Britannica: Macropaedia*, 1989 ed. (23:234-290.)

2 P. 240.

2. Traditional Claims and Historical Record

It is interesting to start with an *apperçu* of the claims made by Jewish traditionalists.

Talmudic and Rabbinic legal discussions are replete with complex reasoning processes, which seem logical, at least at first sight. With regard to historical record, these discussions began around the 2nd or 1st century BCE — that is, when the Mishnah (the crux of the Talmud) was developed — stretching to the 5th century CE. However, according to Talmudic and Midrashic literature (the latter dates from about the same period), claiming oral tradition, Talmudic debates were mere reflections and continuations of legal discussions dating from Mosaic, and in some instances from Patriarchal and even Antediluvian, times.

Furthermore, Talmudic and Midrashic literature reports that Talmudic legal decisions were based on a number of explicit interpretative, or *hermeneutic*, principles, claimed to have been taught by God to Moses, and then faithfully transmitted by word of mouth to Talmudic generations. These principles, or *Midot*, were intended to facilitate and govern understanding of the written law given in the Torah (the first Five Books of the Jewish Bible, revealed at Sinai some 3,300 years ago).

If these principles were rules of logic, and if they were indeed as ancient as alleged, then the Jewish people had a functioning logic theory long before the Greeks (whose known written work in the field started around the 4th century BCE). This does not seem unreasonable, if we reflect that the Israelites had a written language and developed literary culture several hundred years before the Hellenes[3].

Now, this is the traditional thesis, very briefly put. Let us leave it at that for now, and trace the history of Jewish logic in a bit more detail. (The reader is referred to standard reference works for more ample details, such as the *Jewish Encyclopedia*[4] and the *Encyclopaedia Judaica*[5].)

There is certainly evidence of logic practice in the Torah and subsequent Books of the Bible. A Midrashic work (*Bereshith Rabbah*, 92:7) explicitly notes this, listing ten *a-fortiori* arguments scattered in it (for example, Genesis, 44:8). In fact, as the present author has shown elsewhere, there are many more *a-fortiori* in the Bible. Furthermore, as well as such deductive practices, we find inductive practices (namely, adduction[6]) in it, which are even somewhat explicited (in Deut. 13:2-4 and 18:21-22).

However, apart from the just mentioned passages, there is no mention, use or listing in the Bible of the hermeneutic principles which make their written appearance in Talmudic times. The exception is *a-fortiori* argument, which is *used* by protagonists in the Biblical narrative (including God, Moses, patriarchs, kings and prophets), though not *explicited* or *explicated* in any way. Adduction, though used and to some extent explicited (but not explicated) in the Bible, and in fact widely used in the Talmud, is not counted by the Rabbis as a hermeneutic principle.

As far as the written record shows, the hermeneutic principles used in the Talmud and after were authored by sages of the time, notably **Hillel** (to whom a list of 7 is attributed) and his rival **Shammai** (both *Tanaim*, participants in the Mishnah), **R. Ishmael** (to whom a list of 13 is attributed, in *Sifra*, chapter 1) and his rival **R. Akiba** (both *Amoraim*, participants in the Gemara). It may readily be admitted that, as is mentioned in the Talmud itself, these men learned some of the interpretative rules they taught from their own immediate teachers, or that they induced them by observation of their own or their close colleagues' thought processes — but it is hard to prove that these principles were already known in Biblical times and were taught by Moses.

It is worth noting that, though the lists of hermeneutic principles proposed by these various Rabbis have points of agreement, they also in some instances exhibit significant differences. These methodological disagreements predictably affected the reading of the Biblical text by the various Rabbis concerned, and their respective schools, and caused divergences in their legal opinions (*ab-initio*, though they were eventually harmonized, by means like

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[3] As is well established on the basis of archeological evidence, the Greek alphabet was a relatively late offshoot (*c*. 6th century BCE) of the Phoenician, which was almost identical to the Hebrew. The alphabet from which the Phoenician and Hebrew evolved is estimated as dating from the 17th century BCE.

[4] New York: Funk and Wagnalls, 1968.

[5] Jerusalem: Keter, 1972.

[6] To 'adduce' information, means to put forward data which continues to buttress some hypothesis, or (in the negative case) henceforth eliminates it from consideration.

majority vote). If these various principles had indeed, as claimed, a common, Mosaic origin, it is difficult to explain convincingly why they were contradictory; if the contradictions were due to erosions of memory, it is difficult to assign Mosaic authority to the principles.

Furthermore, detailed analysis shows that the language in which the hermeneutic principles was expressed went through a process of change and even evolution. This is evident in the case of the one process which is found in the Bible, and later in lists such as those of Hillel, R. Ishmael and the slightly later R. Eliezer ben Yose ha-Gelili (whose list had 32 principles), namely *a-fortiori* argument. In the Bible, the language used in such argument is colloquial and unspecific; whereas in the Talmud and after it is much more technical, involving specialized terminology (like the expression *qal vachomer*) not used in other contexts, which is clearly the product of a theoretical reflection.

Additionally, if we compare the lists of R. Ishmael (who only mentions *a-fortiori*, but does not describe or analyze it) and R. Eliezer (who distinguishes between two variants of it, namely *michomer leqal* and *miqal lechomer*, i.e. from major to minor and from minor to major), we may well conclude that there were in fact theoretical developments over time. We may similarly observe a development from Hillel (1st century BCE) to R. Ishmael (2nd century CE) in other principles. For instance, the *klal uphrat, prat ukhlal* principle of Hillel is regarded by most authorities, traditional and secular, as having been split up by R. Ishmael into several more specific rules (namely, Nos. 4-7, and possibly 8-11).

We can thus say without fear of error that there was an evident evolutionary trend, and reject the notion of a monolithic Rabbinic logic of Sinaitic origin, unchanged by time. Such origin is only explicitly and dogmatically claimed much later, anyway, having been apparently first proposed by Saadia Gaon (d. 942 CE), and then echoed with more and more insistence (because of the gradual perception of its capital importance in the justification of Rabbinic law). The Mishnah of *Pirke Avot*[7], which purports to name the trustees of the oral transmission of Jewish law from Moses to its own day, does not specifically mention the hermeneutic principles.

Moreover, the evolutionary trend visibly continued in subsequent centuries, with more and more refinements and restrictions proposed by successive generations of Rabbis, as new queries and insights arose. The latter always pretended to be mere vehicles of ancient traditions on the subject; but there is no textual evidence to support such claims. We must rather see them as 'arguments by anachronism' — it was common practice in the Middle Ages (also before, and since, in Judaism and elsewhere) *to try to justify a belief by attributing it to a past authority*. This device was buttressed by intimidation: accusations and threats which silenced potential critics for centuries.

The practical skills in hermeneutics did not change much; indeed, one may well admit that the earlier masters in the art were superior to their later disciples. (I do not mean to imply that later authorities, like Rashi or Maimonides, were deficient in skills, but only that their forerunners were, after all, their teachers). What evolved was theory; and it did so in two directions. One good: improved definitions, clearer understanding of the mechanics involved; one bad: a reduction of freedom of thought, an attempt to control use of the processes, so as to prevent modifications in the law.

So much, here, for the history of Jewish logic in itself. Let us now consider things in a broader historical context and with regard for the objective value of processes.

3. Comparisons and Assessments

To precisely determine the place of Judaic logic in world logic history, we must *evaluate* it; that is, objectively assess it, determine how much of it, if any, may be considered as really logic. In a broad manner of speaking, any thought process is an act of 'logic'. What makes us, however, class it as good logic, or logic in the sense of a scientific thought process, is our ability to demonstrate its universal validity.

It is, without doubt, **Aristotle** (a 4th century BCE Greek) who must be credited with the discovery of the scientific method of validation of arguments. Prior to him, no one we know of had come up with the idea; though his predecessors, Socrates and Plato, had begun to become aware of the issue. The method of Aristotle was simple,

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[7] Bulka, Reuven P. *As A Tree By The Waters.* Jerusalem: Feldheim, 1980. (pp. 19ff.)

though brilliant. It was, firstly, *formalization*: the substitution of symbols in place of specific terms, the consideration of form irrespective of content. Secondly, the testing of processes (so denuded of particular issues) with reference to the '*laws of thought*', namely identity (A is A), non-contradiction (A cannot be nonA) and exclusion of the middle (either A or not A).

What is amazing, historically, is that Aristotle's method was never grasped or adopted by the teachers and law-makers of Judaism, even though they had had considerable contacts with the Greeks. Historian Chaim Raphael[8], of Oxford University, describes their early relations as follows:

> The Jews… had been aware of the Greeks as part of their world long before the arrival of the Macedonians under Alexander the Great. Greek traders had been familiar in the coastal towns of Palestine as early as the seventh century BC. There were Greek mercenaries in the Egyptian and Babylonian armies, including the army of Nebuchadnezzar. From the time of its greatness in the fifth century BC, Greece had poured a profusion of explorers, adventurers and scholars into the Near East, and the Jews had responded.

But I am not sure this is an entirely accurate picture. The fact is that although Israel/Judea was conquered by Alexander, a direct pupil of Aristotle and a man interested in cultural exchanges with the peoples he conquered; and although he was, exceptionally, well-liked by Jewish traditionalists; and although the Jews remained under Greek political dominion and/or cultural influence for centuries thereafter (until the Roman takeover, and the Romans had a Hellenistic culture, anyway) — Aristotle's conceptual breakthrough in logic had apparently no direct effect on Judaism. However, perhaps we should not be so surprised. After all, Alexander's empire stretched East all the way to India, yet Indian philosophy seemingly never adopted formal methods of discourse, either.

Generally speaking, we may expect the interactions of peoples to involve some give and take of information and methods. But we cannot predict, without detailed study of the matter, precisely who influenced whom, and in what domain and to what extent. It is as erroneous to presume that the politically dominant party shall have the greatest influence, as to presume that the intellectually or spiritually superior party shall have it. The historian must avoid pure speculations, based on a very narrow context of data and driven by hidden agendas.

In the present case, we can on the basis of close study affirm the following:

1. ***With regard to the Jewish Bible***, a document which according to Jewish tradition and most secular historians antedates Greek logical discoveries by about 1,000 years (but, according to so-called Higher Critics, by only a couple of hundred years):

a) There are evidently both deductive and inductive reasoning processes in its stories and legal statements. Differences in this respect between the various Books of the Jewish Bible do not seem significant (i.e. are probably just happenstance), judging by linguistic and statistical indices.
b) While use of categorical and hypothetical syllogism may be found in the Torah and other Books (it would seem odd if it were not, since thought by means of classes and theses is fundamental to human thought), it is not there talked about in an abstract manner. That achievement is undoubtedly Greek (Aristotle, Philo the Megarian, for examples).
c) As already stated, there is a distinctive deductive process in several of the Jewish Books, namely *a-fortiori* argument; again, this is repeatedly used, but never talked about. This form of argument may have been used by the Greeks (it remains to be shown), but they never noticed it or elucidated it theoretically (as far as we know). The fulfillment, to a large extent, of these tasks may safely be attributed to the Rabbis of the Talmudic period and after. *A-fortiori* arguments do occur in the Christian Bible (notably, in Paul), but their abstract discussion in Western philosophy appears much later, in the Middle Ages.
d) As already stated, too, we find in the Book of Deuteronomy a nearly formal expression of the two laws of adduction, concerning the confirmation or elimination of hypotheses. These laws are there stated in relation to the empirical testing of prophecies and prophets; but, nevertheless, they are so clearly formulated that they may be viewed as a universal lesson in inductive cognition. Furthermore, since these statements concern evaluation of what religion conceives as the highest level of consciousness (namely, prophecy), they are

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[8] *The Road from Babylon: The Story of Sephardi and Oriental Jews.* London: Weidenfeld and Nicolson, 1985. (p. 31.)

perforce applicable to lesser levels. Western formulation of the two laws of adduction is a much later phenomenon, in the era of Francis Bacon and Isaac Newton.

e) Other kinds of reasoning, deductive and inductive, are doubtless manifest in the Jewish Bible, though in much less differentiated form. If arguments appear, they are enthymemic rather than full; and they are used, but not discussed as such.

2. ***With regard to the Talmud*** (whose legal debates began to all evidence a couple of centuries after the Greek conquest of the Holy Land) and after:

a) We find there much more complicated reasoning processes (inductive and deductive) and much more developed linguistic tools used, as well as considerable theoretical reflection on many of these practices. Rabbinical thought processes included, not only arguments by analogy and causal inferences, but also (though less consciously) opposition, eduction, syllogism, production, dilemma, generalization and particularization, adduction and many more forms. However, contrary to orthodox claims, the Talmudic and later Rabbis were not infallible and all-knowing; they (individually and collectively[9]) made practical and theoretical mistakes.

b) On the positive side, we may mention especially two processes, which were more developed in Rabbinic logic than elsewhere, namely *a-fortiori* argument and *reconciliation of conflicting theses*. With regard to these (the first and thirteenth *Midot* of R. Ishmael), there is no doubt that the Rabbis were in advance of their time for centuries, both in the quantity of their practice and in the quality of their theoretical awareness. However, though these processes are demonstrably valid, it does not follow that their use by Rabbis was invariably faultless, nor that their understanding of them was complete.

   It must be stressed that Aristotelian logic did not take into account *degrees* of possession of qualities (as does *a-fortiori* argument), nor the '*balancing of opposites*' aspect of logic (as does harmonization of conflicting theses). The species of a genus might have a hierarchical relation to it, but this was not brought out in the syllogism (which merely confirmed the common ground between the terms); and when two arguments arrived at opposite conclusions, there was no conscious attempt to reconcile them (the reasoning process stopped or became unconscious as of the discovery of conflict, with the thought that 'one thesis or the other or both must be wrong'). Greeks evidently functioned in a more 'either-or' (or 'all or nothing') mode than the Jews, who rather sought to find the nuances between predicates and the commonalties of disparate views. In Rabbinical debates, this attitude served to maintain the credibility and authority of all participants.

c) On the negative side, Rabbinic thinking included many wholly or partly questionable if not demonstrably invalid forms. 'Logic' was to the Rabbis very often merely a way to buttress predetermined 'conclusions', rather than a means to discover unknown facts. This is evident in many of the interpretative techniques they adopted. There were always, in those, an appearance of verity; but closer analysis shows them to have been fallacious.

   One fallacy consisted in *drawing a possible conclusion and declaring it necessary*; that is, *an inductive alternative was attributed the status of a deductive certainty*. Another sleight of hand consisted in *starting with a general premise and (even though it not give rise to a conflict) particularizing it along the way, so as to obtain a conclusion contradictory to what it would otherwise have been*. The arguments passed, being often too intricate for non-logicians to sort-out.[10]

d) Thus, though their approach was not always lacking in objectivity, it was essentially unscientific. Their ultimate arguments, stated or tacit, were that they had Divine sanction and traditional continuity, and that whoever disagreed with them was merely expressing rebellion against the powers that be and deserved punishment accordingly. Because the Rabbis did not have a concept of impartial validation of thought processes by formal means, they could not see how they might possibly err.

e) As already remarked, it is very surprising that the formal method and specific discoveries of Aristotle were not understood or adopted by the Rabbis; nevertheless, that is historical fact and the main explanation for their practical and theoretical problems. In early centuries, this avoidance of the scientific method was perhaps

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[9] An individual's error is collective if uncorrected by the peer group.

[10] I here merely highlight two examples. See especially the analyses in chapter 10-12 of my work *Judaic Logic*.

naive, a side-effect of Jewish rejection of the mores and morals of non-Jews; in later centuries, it became dogmatic, an intractable ideological position.

I think the existence of such distinctive currents in Judaic logic, for good or bad, proves the point, that it has been an independent and distinct enterprise. R. Shmuel Saffrai, of Hebrew University in Jerusalem, author of the *Encyclopaedia Judaica* article 'Hermeneutics', reaches a similar conclusion:

> It is debatable whether (as suggested by the 12th century Karaite author Judah Hadassi) any Greek influence can be detected, though terminologically some of the rules have Greek parallels.

Much later, of course, mutual influences between Jews and non-Jews developed considerably. Christian (and Moslem) scholars in the Middle Ages and after were influenced by Rabbinic methodology, whether through study of written texts or in oral disputations[11]. And Jewish scholars, like Maimonides[12], did eventually study Aristotelian logic[13]. Some Jewish commentators attempted to justify this new openness by interpreting (quite logically!) 'the commandment to maintain correct scales, weights and measures (Deut. 25:13-15) as referring to the rules of logic', in addition to its literal sense[14]. The role played by Jewish translators in logic history should also be mentioned; they helped to revive interest in Aristotelian logic, bridging the contemporary Moslem and Christian cultures[15].

Nevertheless, to repeat, Greek formalism never found its way into Judaism. Logical skills can, indeed, as Jewish tradition claims, be adequately taught and passed on *by way of examples*, which may moreover be classified under rough descriptive/prescriptive principles. This continues to occur in Jewish circles, and therefore can be assumed to have occurred in the past; furthermore, it occurs in non-Jewish circles. The communication of any knowledge content always involves passing on a 'way of thinking'; this is sometimes more effective than teaching logic by explicit principles. Nevertheless, non-formal methods are deficient, in that they do not permit a proper evaluation of the material transmitted; only the use of variable-symbols makes certainty possible. [16]

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[11] Similar disputations are reported by the Talmud to have occurred in Greek and Roman times.

[12] Maimonides (Spain, Morocco and Egypt, 1135-1204) was very impressed by Aristotle's presentation of logic and at the age of sixteen wrote a book on logic in Arabic, the *Makalah fi Sana'at al Mantik*. (See *Enc. Jud.*, 11:459-460.) His later and better-known *Guide for the Perplexed*, which defines many logical and philosophical terms, was highly influential on Christian (and Moslem) thinkers, including Thomas Aquinas and Leibniz, as well as on Jewish thinkers like Spinoza. (See Heschel, Abraham Joshua. *Maimonides: A Biography*. 1935. Trans. Joachim Neugroschel. New York: Farrar, Straus, Giroux, 1982. p. 209.) More important, without such logical studies, it is doubtful whether Maimonides would have become the powerful systematizer of Jewish law he became, notably with his *Mishne Torah*, influencing all subsequent treatment of the subject.

[13] In some cases indirect influence seems evident, though direct study is doubtful. This is I suspect true of R. Moshe Haim Luzatto, known as the Ramchal (18th cent.), in his *Derech Tevunot* (*The Ways of Reason.* Trans. D. Sackton and Ch. Tscholkowski. Jerusalem: Feldheim, 1989).

[14] Heschel, p. 168.

[15] Raphael, p. 102; and *Enc. Jud*.

[16] Written in Geneva, 1995, to correct an article called *Jewish Logic* written in 1990 and published in *World of Chabad* of Vancouver, B.C.

11. Islamic Logic

This essay was written end 1998 or early 1999, as preparatory notes for a series of lectures on philosophy delivered to a group of some twenty students at the Université Populaire de Genève. It has been slightly edited since then.

1. The Structure of Islamic Law

This section is intended serve Moslems, as well as believers in any other religion (Jews, Christians, Hindus, Buddhists, or whatever) to view their own beliefs in perspective (it is often easier to admit reasoning when one is not personally attached to a doctrine). My intent is certainly not to express disrespect for Moslem beliefs, though I of course wish them too to be more open-minded.

Islamic law has three sources: the Koran, the hadith and the law doctors.

1) THE KORAN: Alleged revelation from God to angel Gabriel to the prophet Mohammed, to the people, contemporary and subsequent.
Equivalent to the Torah (or Tanakh); it is the founding scriptures, the ultimate reference document for Islamic law.
Epistemological problems:
For Mohammed: granting his sincerity, how can he be sure the vision and voice of Gabriel was not a hallucination. How can he be sure his "Gabriel" is a messenger from God, and not a visitor from some other planet, say.
For his disciples and followers: how to be sure of Mohammed's sincerity (i.e. that it was not all a trick of his to gain power and influence) and accuracy (i.e. that he did not simply hallucinate).
Note also that, according to Arnaldez[1], the Koran has so far not been subjected to historical and textual criticism by impartial researchers.
The recipients of an alleged revelation have to learn to distinguish between:

a) The appearance of sights and sounds to the alleged prophet — X.
b) The verbalization of the phenomenon — "X occurred"
c) The identification of God as the source of the phenomenon — "X was from God".

d) The taking into consideration of the recipient of the message — "Mohammed considered that God gave him the message X".

The alleged event (a) and the various propositions about it (b, c, d) cannot logically be treated as equivalent, as naïve readers of revelations tend to do. (d) does not necessarily imply (c), (b) or (a). The transition from each to the next involves a conceptualizing or rational act of a human mind, and is subject to possibilities of error of observation or verbalization or causal logic. This is true of any revelation, not just the Islamic.

2) THE HADITH: Alleged eyewitness accounts of the sayings and doings of the prophet, supposedly written down by his contemporary followers, for their successors. Some hadith were apparently transmitted orally. Some have been judged authentic (*sahih*), others less so (*hasan*), still others forged (*saqim*).

[1] Roger Arnaldez, *L'Islam* (Paris: Desclée/Novalis, 1988), p.196.

Serves as second level of reference for Islamic law. Thus, technically equivalent to the Oral tradition of Judaism (written in the Mishnah and Gemara), though *less spread out in time* and therefore more likely to be a reliable report.

Epistemological problems:

For the eyewitnesses: granting their sincerity, how can they be sure their observations of Mohammed's actions were properly remembered and relevant.

An item X may be a broad law; Mohammed's action represents one possible concrete application of that law (he has to apply it *some*how); but there may be other acceptable concretizations; the simple fact that Mohammed chose a given one, though legitimizing, does not in itself exclude other conceivable concretizations. To make Mohammed's actions equivalent to law is to imply he received more instructions than he transmitted, and to make a wrong generalization from his actions.

With regard to verbal pronouncements by Mohammed reported by others: they may have been improperly remembered; and even if they were written immediately (though not verbatim), they may have been improperly understood and reported.

Similar problems, and more, occur with regard to Jewish tradition. A rabbi may perform a mitzvah in a certain way, because he has to do it some way, not because it is the only way; yet his disciples take it and transmit it as *the* way; and so it remains if uncontradicted. If a rabbi says something, his disciples likewise will assume it of traditional origin and descent; but it may in fact be his own interpretation, or he may have misunderstood what *his* teachers said or did, or he may have badly remembered and filled in blanks, and so forth.

For the subsequent generations: they may doubt the sincerity of the eyewitnesses, or their accuracy of hearing or observation, or their having been eyewitnesses at all, or the authenticity of the text received. It is important to resist the tendency religion induces in us all to be credulous to events or claims that are far away in time and therefore almost unverifiable!

We can here, as above, express the transitional problems in formal terms: that "Alleged eyewitnesses claim they saw or heard Mohammed doing or saying Y" does not prove that "M did/said Y", nor that "What Mohammed did/said was divinely approved or intended". It is naïve to regard these propositions as equivalent, each one involves further assumptions than the next.

3) THE LEGAL EXPERTS: those who try to develop a precise jurisprudence, with reference to Koran and hadith, resolving contradictions, making clarifications and inferences, filling in blanks, extending laws to new situations.

Epistemological problems:

Here, reasoning is at stake, just as in the Talmud and subsequent rabbinic writings (formal issues, in addition to alleged traditions as to content). Initially, personal opinion (*ray*) of Islamic masters was legitimate; eventually, traditionalists reacted with more stringent demands. Their hermeneutics, which have some resemblances to the Judaic, may similarly be subjected to critical review.

2. Islamic Hermeneutics

This section is significant, in that it constitutes a comparative study, of interest not only to Moslems but equally to Jewish Talmudists.[2]

If there is a conflict between two verses of the Koran, or a verse of the Koran seems in conflict with an authentic tenet of the hadith, Muslim doctors of law propose the following **harmonizations**.

1st rule: exception.

If one text is more restricted in scope than a *conflicting* other, the narrower is considered an exception to the larger.

[2] See Arnaldez, pp. 33-45, 56-57,191-197.

> The major premise: "X is to do Y";
> the minor: "X is not to do Y, when Z";
> the putative conclusion: "X is to do Y, only when not Z".

The conclusion renders the major premise conditional. This solution seems credible, granted both texts have comparable level of authority and reliability. Note that this rule is comparable to Rule 10 or perhaps 13 of R. Ishmael in Talmudic hermeneutics; it is a dialectical reconciliation.

2nd rule: merger.
If one text prescribes (or forbids) a part of some class and the other *similarly* prescribes (or forbids) another part of the same class, there is no contradiction: together the two texts form a larger proposition.

> The major premise: "X is to do Y, when Z1";
> the minor: "X is to do Y, when Z2";
> the putative conclusion "X is to do Y, when Z1 or Z2 (or 'when Z', if Z1 and Z2 constitute all of Z)".

This is a valid merger or amplification.

3rd rule: exclusion.
If one text prescribes (or forbids) to what seems a general subject (X) what seems a specific predicate (Y1), and another text obversely forbids (or prescribes) to what seems a specific subject (X1) what seems a general predicate (Y), then we must conclude that either the specific subject is *not included* in the general subject or the specific predicate is *not included* in the general predicate (the decision between these two alternatives depending on finding another text which comforts the one or the other).

> The major premise: "All X are to do some Y1";
> the minor: "No X1 is to do any Y";
> the putative conclusion: "No X1 is X" and/or "No Y1 is Y".

For, it is tacitly argued, if we add to the major and minor that "All X1 are X" (subjectal) and "All Y1 are Y" (predicatal), we must conclude that "All X1 are to do some Y" (pitting the minor against the three other premises) and "At least some X are *not* to do any Y1" (pitting the major against the three other premises), by regular syllogisms and substitutions.
Note that in fact, it suffices for the subjectal premise to be "At least some X1 are X" to obtain the result "No X1 is X". Also, given the needed generality of the predicatal premise, the second result should be "At least some Y1 are not Y". But we can accept the generalities everywhere, granting that we are dealing in *kinds*, i.e. whole classes (to be precise, such acceptance involves a generalization). Also note, the disjunction in the conclusion may be taken as inclusive, and/or.
This is a credible resolution of conflict, granted both texts have the same level of authority and reliability. Comparing to Talmudic hermeneutics, this rule concerns a situation treated under Rule 10 of R. Ishmael; but whereas the latter resolves the conflict by a daring particularization of the major premise, the Islamic version more carefully challenges the subjectal or predicatal premise.

4th rule: abrogation.
If one text prescribes (or forbids) the entirety of what another text conversely forbids (or prescribes), one or the other text must be abrogated, i.e. considered null and void. If one is more recent, it is to be preferred. Otherwise, add certain commentators, if one is seemingly more demanding, it is to be preferred. But there are often

disagreements, when such conflict resolutions are not readily available. (Another logically conceivable resolution, note, would be to particularize both premises to some extent—but I do not know if Islamic interpreters use this option.)
There is a Koranic text (2:106) saying that abrogation of a law occurs only when a better or similar one is promulgated (for some this implies that God, the author of the Koran, is the only abrogator or promulgator). This is understood at one level to refer to God's abrogation through the Koran of some pre-Koranic laws. At a second reading, it may imply that there should be no unresolved contradictions within the Koran, which is doubtful considering the need for two of the previous three rules. Naturally, if one text has greater authority and reliability (e.g. Koran vs. hadith), it is to be preferred. But the law doctors wonder whether the lower text (hadith) may abrogate the higher (Koran) in certain cases.
On a formal level,

> the major premise: "X is to do Y";
> the minor: "X is not to do Y";
> so, one or the other must indeed be abandoned in the conclusion.

The preference of the more recent (say, within the Koran, which is *not* chronologically ordered) is sound practice, though it is unclear why God would change His mind so quickly, before the earlier law has had time to be put into practice (if that is the case).
Concerning the subsidiary rule about the relative severities or leniencies of the two texts, the implication is that the two predicates are not really identical (Y).
Regarding conflicts between texts of unequal authority and reliability, I fail to see how the lower (hadith) can displace the higher (Koran), but I have not seen relevant examples.
We may add that it could be appropriate to use such a rule when there is a conflict between a text (Koran or hadith) and an established empirical fact; the latter winning, according to our modern view.
For comparison, abrogation is not officially included in Talmudic hermeneutics, though in practice it occurs (e.g. at least, when one rabbi's position is preferred to another—but sometimes perhaps also in Torah contexts, as e.g. in the apparent conflict between Gen. 1:29 and 9:3[3]).

There are some similarities between the above four rules and Talmudic harmonization rules. But the latter often consider more complex situations and propose more far-fetched logical responses. One significant underlying difference is the rabbinic concern with *redundancies*.

There are, additionally (mentioned in my said source), two types of reasoning by **analogy**.
This involves generalization. An issue, here, is why the original text did not mention the sought-for generality in the first place. In cases where the new cases were unknown at the time (e.g. electricity, say), this is understandable. But in other cases, the use of such reasoning may seem daring.

5th rule: extension by direct analogy.
A law given in the text concerning some particular case(s), may be extended to all other cases of the same sort. The difficulty with this method, as the law doctors admit, is the vagueness of the underlying criterion of resemblance. Formally,

> "X1 is to do Y" and "X1 is an X",
> therefore "At least some X are to do Y";
> therefore "All X are to do Y".

[3] I am not sure this is a good example, as neither passage explicitly excludes the other: permitting vegetable food and permitting meat are not strictly in conflict, only *davqa* readings make them seem so.

This is syllogism followed by generalization, which is in principle acceptable, so long as no reason is found for particularization. This method calls to mind that of *gezerah shavah* in Talmudic hermeneutics.

6th rule: extension by indirect analogy.
When a law found in the text concerns some particular case(s), *the reason* for the law is sought, before extending to all other cases which seem subject to the same underlying reason. Formally,

> (a) the initial law is "X is to do Y" (textually given);
> (b) furthermore, we presume that "X is to do Y, *because* X is Z" (not textually given);
> (c) granting this, we are supposing that "All Z are to do Y" (not textually given).

The third proposition is seen as an explanation of the "because" clause in the second[4]. For, with the propositions "X is Z" and "All Z are to do Y", we can by syllogism infer the given premise "X is to do Y". It is clear that propositions (b) and (c) are not inferred from (a); rather, we have sought out propositions *from which* (a) might be inferred. (b) and (c) are thus hypotheses which fit this requirement; but it does not follow that they are the only possible such hypotheses. So long as no alternative explanation of (a) is found, then (b) and (c) have some credibility. We have, then, at best an inductive argument, not a deductive one, note well.
This method resembles somewhat that of *binyan av* in Talmudic hermeneutics. It is called ***qiyas***, and was developed by the imam Al-Shafii (d. 820). Another jurist, Ibn Hazm, also known as Abu Mohammed Ali (Spain, 994-1064), criticized this approach, arguing that God's intent in the Koran was precisely what he said and no more (except where the text is put in doubt by another text).

7th rule: application.
Additionally, some Moslem commentators acknowledge syllogistic reasoning composed of a Koranic major premise and an observed minor premise. E.g. "Fermented drinks are forbidden" and "wine is a fermented drink", therefore "wine is forbidden". The issue here is whether the middle term is correctly interpreted.

Other rules.
My source further mentions the methods of ***istihsan*** (a law is proposed because it seems 'good') and ***istislah*** (a law is proposed because it seems 'useful to the Community'), which institute laws not mentioned in the text, that is, through insight of their value. As some Moslem commentators have pointed out, such methods may be subjective and arbitrary, and lead far from the given text. Indeed, value-judgments are almost bound to be conditioned by personal and social/cultural context; they may easily be prejudices.
There is also the principle of **consensus** (*ijma*), which resembles the Talmudic principle of *rov* (majority). The Islamic principle is based on a hadith where Mohammed says "My Community will never agree together on an error". The issue then arose, on a practical level—who to include in the 'Community'? Democratically, it would be the whole population; this being at the time impracticable, the law doctors were referred to; but in view of communication difficulties in the vast Islamic empire, only those of major Islamic centers were considered. Some commentators suggested, instead, that the 'Community' included only the immediate companions of the Prophet.
The very fact that there are disagreements among authorities regarding the reference intended by the language of this hadith—as well as the practical difficulties of application of different interpretations—make such a rule of consensus open to doubt, and therefore ultimately to some extent arbitrary.

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[4] Another interpretation of the clause "because" in (b) would not have the same effect. If, for instance, it meant that Z is a *sine qua non* for Y, then (c) would read "Only Z are Y", which implies "Some Z are Y and No nonZ is Y", which is not enough to infer (a) syllogistically.

The above is probably not a complete list of hermeneutic rules used in developing Islamic law.
Note also that the formal representations of the rules proposed above are my own logical clarifications. The Islamic jurists who appealed to these techniques were not necessarily as clearly aware of their structures; and those who were theoretically aware, did not necessarily always manage to adhere to them in practice. Probably, some interpreters occasionally wrongly (through mistakes or dishonesty) claimed their judgments based on these ideal forms.
Anyway, the rules mentioned above seem overall respectable, from a logician's point of view. Needless to say, this positive evaluation of some logical methods is not intended as a comment on the content of Islamic law, or as an expression of any sort of personal endorsement of Islam.
Incidentally, some Islamic methods resemble Talmudic ones, but the former are on the whole more natural. It is significant that the latter are often more artificial. This may be due to their being of earlier date historically; it shows anyhow that they are not universal to all religious groups, and therefore not normal to human reasoning. Nevertheless, apparently, Talmudic logic includes valid forms, like the a-fortiori argument, which are (to my knowledge so far) absent in Islamic methodology, at least at a self-conscious level.

3. Interpreters

Note, finally, the distinction between Divine law (*shar*), found written in the Koran and not giving rise to disagreements among law doctors; and Applied law (*sharia*), developed by law doctors, in response to textual conflicts or through other motives.
This distinction is similar to that between unproblematic Torah law, and Talmudic and Rabbinic interpretation of law (*halakhah*).

There are four main **schools** of interpreters of the law[5]:

- the liberal **Hanefists** (Abu Hanifa, d. 767), found in Turkey, Central Asia, Pakistan and India;
- the **Malekists** (from Malik b. Anas, d. 795), dominant in North Africa;
- the **Shafeists** (Shafii, d. 820), especially in Egypt and Indonesia;
- and the rigid **Hanbalists** (Ahmad ibn Hanbal, d. 855), in Saudi Arabia.

A fifth school, not officially recognized, is that of the **Zahirists** (including ibn Hazm, already mentioned), which sought literal readings and rejected laws based on human reasoning. We might roughly compare these to the Sadducees (*Tsadokim*) or the Karaites (*Qaraim*) in Judaism.
Mention should also be made of the **Reformists** (principally Jamal al-Din al-Afghani, 1838-1897; Mohammad Abduh, 1849-1905; Rashid Rida, d. 1935). They tried to "reopen the gates of the *ijithad*," that is, the effort of personal interpretation, in lieu of the servile imitation (*taqlid*) of past law doctors by present 'orthodox' ones, and to adapt Islamic law to the modern world influenced by Western civilization. This may be comparable to Conservative or Reform Judaism.

> Note that the above list makes no mention of Persian interpreters, so that I am not sure whether it applies only to Sunni Islam, or also to the Shi'ite branch.

The innovating velleities that begun 19th Century have come to little, due to the rise of **modern fundamentalism**, generated by the likes of the Muslim Brotherhood (founded 1928 in Egypt, by Hasan al-Banna, of the Hanbalist school).
An allegedly 'orthodox' backlash started occurring in the early 20th Century, which in the last two or three decades, under the given label of 'Islamism', has sadly become more and more radical and extreme, indulging in blind hatred and violence towards anyone external to it.

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[5] Note, in passing, the following attributions mentioned by Arnaldez (pp. 42, 57): Personal opinion or *ray* was used by Abu Hanifa. *Istislah* was used by the disciples of Malik b. Anas. *Analogy* was used by Shafii.

> According to a newspaper article I read (*Tribune de Genève*, 26-7-05), the main theoreticians of this *Salafiya Djihadia* movement were: Sayed Qotb (Egypt, 1906-66), inspired by Hanbalism, and Abu Al-Mawdudi (Pakistan, 1903-79), of Hanefist inspiration. Their doctrines gave rise to the notorious Al-Qaeda network, among others. The article does not mention the ideological sources of the Shi'ite Ayatollah Khomeini's 1978 Iranian revolution, however.

Moslem intellectuals who wish to reverse this disastrous trend must begin by critically reviewing every single argument put forward by the proponents of modern fundamentalism, (a) checking it for consistency with traditional logical procedures; and (b), in cases where no hermeneutic rule has visibly been breached, considering the possibility tradition offers of alternative juridical interpretations. Many faults are likely to be found in Islamist doctrine on purely Islamic grounds in this way, even before needing to question traditional Islam and more deeply the Koran.

Another important measure is, of course, education – inoculating common people against the fallacious arguments concocted by individuals with dubious motivations. It is all too easy for religious fanaticism to take hold in populations overly prone to emotional incitement and social intimidation, and intellectually ill-equipped to insist on rational checks and balances.

12. Logical Aspects of Foucault's *Archeology*

This is a critical analysis of Dr. Michel Foucault's methodology, as well as doctrine, in his celebrated **The Order of Things: An Archeology of the Human Sciences** *(387 pages, plus a forward and preface)*[1]*. That book is a translation of* ***Les Mots et les Choses****, originally published, in France, in 1966. The author (1926-1984) was a graduate of the Sorbonne and the Université de Paris, who lectured in a number of universities in various countries.*
This essay and the next were written in 1990 in Denman Island, B.C., Canada.

1. Slippery

Ordinarily, when reviewing a book on philosophy, one would present the author's doctrines, then make a critical analysis of them and draw conclusions. However, it is also wise to keep track of methodological issues, both at the descriptive level and at the level of fitting the thesis into a broader context.
In this particular case, it turns out that Foucault's doctrinal arguments are not his main theme. At first, they seem to be, as he discusses various developments in the 'episteme', the epistemological framework, of Western thinking from the Renaissance to Modern times. But as he proceeds, he makes clear, that these doctrines are not his main message; for he is willing, at the end, to deny them, saying 'these are not affirmations; they are at most questions to which it is not possible to reply' (386).
The main thrust of Foucault's book is on a more subliminal level, at the level of his rhetoric, his peculiar way of thinking, the artifices he utilizes in his discourse, his 'logic', if the word may be used. The doctrinal material, whether on epistemology, on philology, biology or economics, or even on ontology and metaphysics — these serve both to provide an occasion for application of his methods, and also, by virtue of the subject-matter of his doctrines, to give depth to the issues and confuse them.
For these reasons, this here review is forced to begin with an analytical exposition of Foucault's methods, as well as their applications, and then to evaluate them. I may thus say, at the outset, that *The Order of Things* is a very skillful and elaborate Sophistic work. I do not use the word in any pejorative sense, but in the strict sense employed by logical historians, in the sense of an age-old school of Philosophy.
Among Foucault's literary devices are the following. They read like a list of The Fallacies, so adept and relentless he is at using a multiple of techniques, which reinforce each other's optical illusions. He disposes of the full array of sophistic instruments; his is a concert of sophistry.
The reader is fatigued, bedazzled, bewildered, and intimidated, into submission. You can never pin the author down, because almost as soon as he says something, he also denies it; he is there, and then he is not there, so that you cannot argue with him, because he has not asserted anything, yet. It is like in the manuals on the martial arts, always to elude the opponent, strike and quickly depart, become invisible and untouchable. The only answer to that technique is to find the slippery character, in the midst of all those feints and velleities. Where he shows himself, you are there.
Foucault's text is filled with ambiguities and equivocations; concepts and words are left undefined or denied their customary meanings, and freely used in a variety of ways. Distinctions are imposed on similar things, or denied to dissimilar things, merely by saying so and repeating it over and over, making it seem like accepted fact. Certain distinctions are transformed into deep, unbridgeable divisions between things, which only the most naive would dare to question. He exaggerates, understates.

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[1] 1966. New York: Vintage, 1973.

Florid sentences, reiterating the same thing in different words, again and again, are designed to make it seem that the thesis in question is being repeatedly confirmed, and that it has many profound facets. These flourishes also make it seem as if Foucault is going through a deductive, interpretative process, so that the sentences he intersperses here and there without proof seem like inferences.

Just as affirmation and denial are, in Foucault, arbitrary (he need only assert something for it to be as he says), so are implication and unimplication and other logical relations (he need only say that P implies Q or that P does not imply Q, and we have to believe him). Thus, *non-sequiturs* become implications, and obvious inferences are forbidden. Words are played on; every doubtful area in meaning or truth is used as the playground, an opportune 'space' for sowing confusion.

He does not make nuances, he inverts the sense of words; in becomes out, out in. Things 'turn in on themselves' or 'over and against themselves'. Circular arguments are concealed in a dramatic cloud of intriguing phrases, which however serve to put over a scattered few crucial 'terms' (which tacitly imply certain propositions), to insert them as accepted fact into the reader's consciousness. Paradoxical statements and self-contradictions are made unabashedly, as if their very antinomy is proof of their profundity and relevance.

Ultimately, for Foucault, propositions need not be assertoric; they may be posited, and then negated, both true and false, or considered established and then as possibly not possible ('it is so… *but* it is or may be *not* so'). It is sufficient that they convey certain catch words or phrases, which give an impression of broad knowledge and deep wisdom. His sophism works, precisely because it seems 'consistent' with itself; it is so pervasive, that he has actually said nothing, so that one may not argue with him.

The theories of others that he presents, in the course of his digressions, are never his point. They are not illustrations of a thesis of his own, but mere vehicles for the transmission of this fuzzy methodology, which is his real message, as he himself admits. The historical events and ideas that he describes for us, serve only to draw and keep our attention, because they are in themselves interesting. But for him, they are only occasions, allowing him to intersperse his own peculiar outlook and terminologies as alleged explicata. They serve to give his interpolations a veneer of reflected legitimacy.

2. Catch Him

By 'archeology', Foucault generally refers to a study of the methodological assumptions at least tacit in the thinking of different cultures and ages. On the surface, it seems reasonable enough to suppose that people, in each place and period of history will display some particular emphases in their ways of thought, which can be identified as an epistemological framework, underlying their whole cultural context. But such patterns are of course only discernible *ex-post-facto*; they are not predictable.

For a start, Foucault does not clearly distinguish between the epistemological practices common to all the people of a defined group, and their own theories concerning these practices, and our own estimates of what these practices and theories might be; there is always a vagueness and ambivalence in that issue, which is rhetorically useful (as already indicated).

But, as it turns out, the method he explicitly proposes allows for such lapses. He is not appealing to ordinary scientific methods, to common logic, but to the so-called Critical/Transcendental method, which was inaugurated by Immanuel Kant (Prussia, 1724-1804). Foucault frankly admits use of this form of argument, though he also claims to be using it with other contents, other terms. According to this method, the 'critical philosopher' can somehow 'transcend' the mind's structural limitations, and make unassailable judgments from above, 'as it were'.

Here, let me say that such argument is an 'imposture' from the point of view of pure logic. It is an attempt to introduce a *deus ex machina* into epistemological discussions. The philosopher becomes a privileged human being, capable in some untold way to become a 'superman', to use a Nietzschean phrase dear to Foucault. This is not logic — it is non-logic, even anti-logic. It has never been validated by the norms of logic, as a form of reasoning.

You cannot at once claim that a Subject is locked into his specificity and finitude, and at the same time capable of acts of consciousness which rise above and overcome these given limits. The two theses are strictly contradictory; there is *formally* no room for doubts and speculations about a paradoxical credibility in between them (Law of the

Excluded Middle). We do not have here a dialectic of 'thesis implies antithesis, therefore the latter is their synthesis', which is the definition of valid 'self-evidence' arguments in logic. The proposed argument is in no way proved necessary by dialectic; on the contrary, dialectic proves it impossible.

If the Subject says 'I see (from above, allegedly) that my consciousness is limited in distortive ways', as do Foucault and Kant, he is automatically de-legitimizing his very own statement (an assertoric cannot imply its own negation, nor, even, *imply* its own negation to be possible). This means, in formal logic, that the proposition in question is false; a conceptual claim which is logically *self-incapacitating* is simply incapacitated, it is alethically impossible and not worthy of any further consideration. Yet, these people continue to try to evade this absolute law for the resolution of paradox.

Foucault claims that the Kantian 'method' marked a radically new stage in epistemological history. I agree that arguments of this sort have since Kant received considerable 'prestige and importance'; but I do not agree that they are indubitable, quite the contrary, they are entirely spurious. Their credibility is due to the paradox which negates them, rather than to the existence of a paradox which posits them; they are not self-evident, or even possible, they are self-rejecting, logically impossible.

This is not a 'radically different' 'configuration of science' as he suggests (nor are the findings and theories of Ricardo, Cuvier and Bopp, formal examples of such an 'other' science); it is illogical and it is therefore not knowledge (366). Foucault's alleged transcendence of language is not a sort of mystical state of silent meditation on the noumenal, but an alienation from even ordinary reality. Perhaps he is describing his own peculiar relation to words and things, but it is not a relation I personally recognize in me, and so it cannot be universal.

This peculiar method is contrasted to the Classical/Scientific method, which Foucault rejects as naive, half-witted and tiny-minded. He claims the change 'irreversible'; but, I say, *surely, criticism, too, can be criticized, it is not itself alone above criticism, the exclusive domain of those who are for it*. I agree, however, that the Kantian method was a radical break from the Classical — in my view, an unfortunate break. The 'second degree' of language, the language of science, is simply a clarification of ordinary language, a selection and re-affirmation of its most intelligent potentials; it is not something essentially different than ordinary language, and (*a-fortiori*) nor can the critical method be so construed.

In any case, it would be untrue, historically, to say, as Foucault does, that either the Classical method or the Kantian is exclusively representative of the *episteme* of its cultural era. Surely, that is hyperbole. Is he referring to university professors, to the scientific community, to intellectuals or to the whole population, of all ages and intelligence, socio-economic milieu, educational level, ethnicity? The indefinition in the subject of his propositions allows him to turn particular ones into universal ones.

But what is clear throughout is that Foucault does not properly understand the scientific *episteme* (any more than Kant did, incidentally). His knowledge of logic is limited to actual-categorical propositions and processes, which are used to construct simple classification 'tables' — drawings which display the similarities and differences of things. This is only one of the tools of scientific logic, and not its *whole* method (thinkers may use a technique long before they become aware that they were using it).

Foucault does not know modal logic, conditional logic of various de re modal bases, causality, or the inductive and deductive capacities of logical conditioning. Class-logic clearly brings out the perpendicularity between the space of objects (subsumed by classes) and that of ideas (classes or classes of classes). When evaluating the content of a thesis, we are duty bound to consider the methods used in formulating it. He borrows terms like 'validation' from logic (which are meaningful to us, only because of their value within logic), and reverses their meanings. He says that certain '…laws of fluctuation and change… cannot be fitted over natural laws', as if formal logic cannot handle transitive relations.

Our movements of thought always display certain patterns, whether philosophers and historians are yet aware of them or not; changes in logical science may effect changes in the frequency and concentration of our use of these thought processes, but not invent them — their discovery implies that they were there already, because it is only possible by an act of self-consciousness. Foucault's use of phrases like 'partial totalities' (he means 'contexts thought to be total, then found partial', to be exact) or 'thoughts that we cannot think' (when he should say 'things we cannot think of' — which is less dramatic, but more accurate), prevents him from developing a healthy outlook.

Because he lacks this logical training, he imagines that Science consists only of simple tables, and he is always very surprised to discover, in history, events or ideas which do not fit this narrow model. For this reason, he sees the logic of science as flawed, and tries to find some alternative 'logic' which will somehow (he never asks or says just how) resolve the difficulties of epistemology. But it is a red herring, this Classical science of his imagination; it is not a correct image of real science, at any point in time or place.

His arguments do not therefore concern the human mind as it in fact functions; they are irrelevant. His so-called 'archeology' is neither omniscient nor infallible. It is of course conceivable that different people *effectively, if not self-consciously*, use different epistemological frameworks; but I very much doubt that Foucault has correctly identified the uniformities characteristic of the historical cultures under consideration. He tries to give the impression that his historical thinking is novel and profound, concerning an additional dimension of time; but none of the evidence he adduces for such an in-depth, into-man line of aseity inductively implies such a conclusion.

While Descartes was predominantly a rationalist, Hume was more of an empiricist, and other people were other things. In every period, there is perhaps a bell-shaped curve, with a multitude of tendencies, though some are more probable for a given time and place. There are shifts in emphasis, perhaps some quick movements or quantum leaps from curve to curve, but there are no 'revolutions' in a strict sense of profound discontinuities. Foucault keeps insisting on them, but he fails to convince (me, at least).

A distinction cannot be transformed at will into a radical difference. Logic, scientific epistemology, have always, since Aristotle at least, sought for timeless generalities about the human means of knowledge. Such a universal science acknowledges freely that different people, at different times in their lives, as well as in different societies and epochs, may use an arsenal of logical techniques which are incomplete or even fallacious.

The logical philosopher has two tasks: to observe the human thought potential and to validate it. That valid potentials are not in all cases actualized, or that invalid potentials are all too often actualized, in no way affects the universality of the logician's findings, for they exist in a modal framework. It is modality which allows the reconciliation between the finitude and specificity of the thinker, and his ability to formulate apodictic statements which are both empirical and rational.

Since logic is able to validate itself very well, thank you, there is no need for a 'transcendental' non-logic; the 'critique' is a redundancy, it has no problem to solve (let alone whether it is capable of offering a credible solution). The Kantian method, and Foucault's applications, are not exempt from the inductive and deductive conditions set by logic; and it does not matter how we characterize the meaningfulness of words.

It must be admitted, however (and this is the faint shining of credibility that the transcendental method has behind it), that there *is* in fact a 'movement of thought', which consists in 'going above or under' or 'taking a step back or aside' from the situation at hand. And this ability of the Subject to withdraw from a context and conceive of a wider context, is of course perfectly possible and legitimate as a logical act. What Kant achieved, is to remind philosophers to take this distance repeatedly, so as to ensure an overall consistency at all levels. The trouble is, Kant wrongly defined the formal aspect of this movement of thought, as a sort of paradox. It is this interpretation of the event by Kant, which is at issue.

Hegel and Marx were of course among those who adopted this interpretation, misunderstanding the psychology of synthesis. One of the more interesting statements in Foucault's book (which shows that good insight can sometimes come out of a bad method, though I do not agree with it all), is the following; I see it as an attempt at poetic description of the consciousness relation between Subject and Object, which is of course so unique as a universal that it is indefinable:

> It is no longer their identity that beings manifest in representation, but the external relation they establish with the human being. The latter, with his own being, with his power to present himself with representations, arises in a space hollowed out by living beings, objects of exchange, and words, when, abandoning representation, which had been their natural site hitherto, they withdraw into the depths of things and roll up upon themselves in accordance with the laws of life, production and language (313).

At a couple of points, to his credit, Foucault waxes romantic (whether sincerely or as a pose, I cannot tell) about the Same, thus suggesting that the ultimate goal of this sophistic self-contradiction dialectic is a Unity. At this point, he returns right back to Nicholas de Cusa's more theistic idea of the ultimate One. Indeed, this sort of Return, of which Foucault is conscious enough, and which makes him human, is also found in his theory of

philology. At first, words were understood as being deeply related to the universals in objects at some level; then they were conventionalized; but at the end, they return to a richer content and relation.

3. Healing

It should be noted that not all historians agree with Foucault's historiology or historiography. The *History of Philosophical Systems*[2], for instance, characterizes his Classical period as Early Modern, implying that Kant did not affect developments that radically (how could he? common-sense persists). Another 'deep chasm' Foucault proposes is that between the Classical period, and the Renaissance and Late Medieval.

According to him, this period was characterized by a frivolous concern with irrelevant relations of 'resemblance', *regarding labels of things as real symptoms of them, and all hearsay or text concerning them as in a sense true and significant*. This epistemology, confusing the sign *for* something (an *accidens*), which is a word, and the sign *of* something, which is a real aspect or effect of the object (an *incidens*) — this is claimed by Foucault to be the overriding *episteme* of the Pre-Classical period in Europe. Note well Foucault's own confusions in the logic of 'semiology'.

That proposition might seem conceivable, but further reflection puts it in doubt. Had people lived *only* by that philosophy, would they have been able to function at all? Surely, ordinary people of all classes were doing some valid observation and reasoning, in their everyday lives. In that case, the Renaissance would only be less rigorous in logic than the Classical period, and not wholly different in some big, earth-shattering way. Formal logic is not affected by such changes; it indeed requires that we make a clear effort to distinguish between imaginary, intimate phenomena, *noetic* projections, and seemingly external, independent and physical ones.

It is true that, as Wittgenstein objected, the relation of indication (pointing to something, and saying I mean 'this') underlying all verbalization is itself a vague act; but context-changes gradually sort and purify such primitive ideas of their possible ambiguities and equivocations, until there can be no mistaking what one is pointing to. Nothing in this act previews the strength of signifying relation involved, whether it is the vocalization or diagram of an insight into real universals, or a merely conventional equation. Modal logic allows for a range of word-thing relations at our disposal.

Even today, we continue to have bumbling 'Don Quixotes' who confuse their fantasies with reality; nothing has changed much. What of Sartre's distress at his role-play of models of behavior he himself constructed? What of the power of today's media (novels, movies, TV, video) to produce role models? There is essentially nothing methodologically criticizable with drawing water from the traditional wells of wisdom. Is Foucault himself not engaging in 'commentary' and 'exegesis' (though with regard to other, less ancient sources), even as he writes that very book of his?

The Classical concept of semiology, as 'representation' of one *idea* by another *idea* (according to the *Port-Royal* definition Foucault mentions; and equally in the work of Bacon, Locke, Hume, Berkeley, and Descartes) was of course also flawed, though in a different way than the Renaissance way. The formal definition of signification is, the relation between an image or conventional symbol and an apparent *object*, whatever that relation (or its object) might happen to be essentially. Foucault fails to clearly analyze the term 'representation'; now he takes it as neutral, now as pictorial, now as pure label, oscillating as convenient (to his theories) between these various senses.

In any case, again, Foucault's presentation of facts is contradicted by those by other historians. The examples he focuses on in support of his case are not necessarily, just because he thinks so, *the most illustrious, most typical or most numerous*. Hamlyn[3], for instance, mentions as among the most significant of that period, Nicholas de Cusa (1401-64, rather early perhaps), Giordano Bruno (1548-1600, an important figure, a precursor of Phenomenology, who discussed the aspect of 'intentionality' in consciousness), Galileo (1564-1642, a founding-father of modern science, mind you), and Francis Bacon (1561-1626, a great logician and philosopher, who clarified the inductive

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[2] *A History of Philosophical Systems.* Ed. Vergilius Ferm. 1950. Paterson, N.J.: Littlefield, Adams; 1961.

[3] Hamlyn, D.W. *A History of Western Philosophy.* 1987. London: Penguin, 1988.

process of focusing on the elimination of hypotheses contrary to experience, rather than on the confirmation of hypotheses).

Furthermore, Foucault's method is flawed, because he refers to a very limited time and place, Europe in the last few centuries. He does not consider other periods of history or other strata of the societies in question or other peoples and cultures. His empirical sample is thus very limited, and he makes hasty particularizations and generalizations, and that is why his research is so distorting. A sophistic method applied to arbitrarily selective data.

Many epistemic and epistemological threads appearing even today are well known to have roots in deep antiquity. Had Foucault considered them, he could not claim what he describes to be novel and fundamental. Even the philologies, biologies, and theories of political economy he (very ably) describes (and prescribes) for us, have some evident roots. In a sense, we can say that Astrology and Alchemy are early forms of Astronomy and Chemistry; that the changes in methodology and subject-matter and doctrine, intended by these name changes, expressed a difference of degree, however large, rather than a total upheaval.

Just because 'natural historians' were concerned with more concrete, superficial, and spatial aspects of living beings, whereas later a more anatomical, functional and abstract science of the phenomena we call 'life' was reached by 'biologists', does not mean that a basic change of consciousness occurred. The visible at the surface and the visible below the surface are both concrete, and all science is to some degree abstract, anyway. Aristotle's work in this field should have sufficed to make Foucault see that the name change was not *so* significant.

The discovery of grammatical inflection as a tool for the comparative study of languages, in no way logically implies that similarities and differences in words and meanings are no longer relevant to that study. Foucault suggests to us that this event somehow changed everything, so that 'general grammar' was replaced by 'philology'. Just as he implies that 'general grammar' earlier displaced the Hebraic model of semiology (which admittedly Nicholas de Cusa subscribed to, indirectly at least).

Rather, I would say, the Enlightenment equivocations in the word 'representation', its ambiguity as 'idea' *versus* 'object', caused a lot of havoc in philosophy, with Kant as a failed attempt to redress the duality. The grammatical inflections — declension of nouns and pronouns, conjugation of verbs, comparatives and superlatives[4] — are merely, from the point of view of advanced logic, condensed propositions, abbreviated signals of statable relational forms. Foucault does not seem to be aware that the modalities of terms and copula are always proportional, whatever their type or category.

Similarly, nothing in logical science excludes that classifications be made on the basis of more complex and abstract relations than simple comparison and contrast of any degree. Nor does logical science make a great formal distinction between more concrete and more abstract contents. Class-logic allows of subsumptions on the basis any type of de re or logical relation, actual or modal, subsumptive or transitive, categorical or conditional in any respect. It is clear that Foucault does not know these things; he only mentions the extensional mode (even the logical mode seems beyond him).

For these reasons, the modern interest in functions of organ-systems (a return, note in passing, to purposive relations) and evolution of species (just a collection of changes) simply refers to causal or teleological logic. These processes in no way necessitate a 'new logic', as Foucault claims so vehemently; they are a formal outgrowth of traditional elementary logic. Likewise, the concepts of labor and production do not displace traditional concepts of economics, since nothing in their logics is that different.

I repeat what I argued in my book *Future Logic*: none of the developments in philology (using the term in a neutral, open sense) in the past few centuries of Western thought in fact, formally speaking, at all undermined the premises and conclusions of Judaic philology. That is clear to me, and Foucault's arguments to the contrary have not succeeded in convincing me otherwise; they are mere sophistries. I do not imply that they are calculated; I simply state a fact from the point of view of pure logic.

My feeling toward Foucault, who is evidently a brilliant writer, is sadness that such a potentially fine mind could have become so mixed up, frankly-speaking. Every writer of theories is saying something about himself, 'where

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[4] *The Living Webster Encyclopedic Dictionary of the English Language.* Chicago: English Language Institute of America, 1977. (p. xix.)

he is at', in the way of a subtext. As European society became secularized (in some cases, atheistic), it sought other unifying principles like 'Nature', and then 'History', to replace the loss of 'Providence'. Foucault is an end product of this march into a sort of alienation from reality, or madness, and his implied cries of despair in the last pages, when the masks of cunning intelligence are unveiled, and the lame imitations of Friedrich Nietzsche's jolly iconoclasm peter out, are touching.

Still, such a book as the one we have here reviewed is inexcusable. It is not philosophy, the serious study of reality and knowledge; it is 'philosophism', an impish love of mischief. If any revolution is needed in philosophy, it is surely one away from such tendencies (if such a miracle is possible). The educational system ought to cease giving credence to such diversions; they waste humanity's time. The philosopher must be more self-critical and have a stronger commitment to finding a reasonable and empirically based philosophy.

13. Comments on 3 chapters of Foucault

Comments (written in 1990) on the first three chapters of Michel Foucault's The Order of Things. An Archeology of the Human Sciences. *(1966. New York: Vintage, 1973.)*

1. Las Meninas

Apparently, a rather longwinded demonstration, with reference to a painting by Velazquez, that real things, events and relationships are infinitely complex, and capable of interminable verbal description. Whereas, once proper names are introduced, the inherent pregnancy and polyvalence of the original is effectively abandoned.
But, of course, it need not be so. The names do not in themselves arrest further description; they are exact parameters, but all the ambiguities beyond them are still operative, and still open to discourse. Nor, as Foucault admits, does the 'infinity of the task' allow us to infer that 'words are imperfect.'

2. The Prose of the World

An interesting analysis of the way the world was thought, until the end of the 16th century, in Western culture, at least according to Foucault. This refers supposedly to the Medieval Christian and Renaissance cultures. He considers that this period shows a distinct epistemological framework, in comparison to the more ancient Graeco-Roman cultures.
This new 'logic' (let us say) centered on an (to our eyes) extravagant concept of 'resemblance' (which later became more refined and stringent, in the 'Classical Age' of the 17th century and on). I am not sure of the correctness of this perception: neither that there was a historical discontinuity, nor that 'resemblance' was so universally understood by the pre-Classicals in quite the way Foucault posits. His interpretation of events is, to be frank, a bit simplistic.
Foucault: Four main kinds of 'resemblance' were claimed. Things may be adjacent in place or time, 'convenient' (proximate); they may be mirror-images of each other, 'emulate' (or imitate) one another; they may be more abstractly and remotely similar, 'analogous'; or they may be 'sympathetic,' one tending to become more like the other—though such change toward identity and singularity is held back by an opposing force of 'antipathy.'
I say: It is especially the last principle which is at stake. The ideas of Sympathy and Antipathy were perhaps a physical theory (natural science). The 'infinite reflection of the Object, even into words, or other shapes and sounds,' idea is tenable, and has some truth. It may be that a large number of writers used this methodology to excess, I am not contesting that. So another interpretation of events, than that offered by Foucault is perfectly feasible.
Even today, the idea of affinity plays some role in our thinking. Does not the butterfly look like the flower? Do not husband and wife often come to strikingly resemble each other over time? The idea of evolution of species by natural selection and adaptation surely contains echoes of this: a process tending to certain uniformities. Modern Chemistry appeals to ideas of attraction and repulsion, to explain chemical compositions.
Foucault: These resemblances were knowable by reference to more or less hidden 'signs,' which were themselves resemblances of sorts. Thus, for instance, the medical value of walnuts was suggested by the similarity in shape these fruits have to the human skull and brain. Since the semiological relation was essentially one of similitude, the epistemology of that period was much less restrictive than our own.
This writer: I am not sure that the method of looking for signs (themselves resemblances) can 'archeologically'-speaking be regarded as the overriding methodology of the period. People were still perceiving, they still had

senses, they still conceived abstractions as we do; they still referred to logic, and were already cognizant with the Ancient works on the subject, including the *Organon*. It would not be accurate to characterize the 16th-century-or-earlier epistemology as exclusively focused on concepts of Sympathetics origin.

Foucault: Anything to do with an object of study, however incidentally or accidentally, was equally significant. Magic and divination were accepted as on the same level as erudition, and ancient texts and commentaries thereon were as relevant as direct observation and independent reasoning. Words about something were part of that thing, and therefore their repetition constituted knowledge, as 'objective' as any other.

Self: The facts presented here are quite conceivable, though I tend to be skeptical that they were historically as widespread as Foucault suggests. In any case, he quite rightly points to the Judaic roots of this indiscriminate methodology. But it would be unfair to squarely blame these developments on Biblical beliefs. Extrapolations were made by certain (let us say) Christian thinkers; but these extensions were not conversant with the traditional parameters of applicability, or chose to ignore them. Thus, Jewish logic can in no wise be blamed for these developments, to the extent that they occurred.

It is true that, according to traditional Jewish philology, the world was created through (a primeval version of) Hebrew, which language therefore reflected, in its sounds and shapes, the essences of the things it referred to. However, according to that same tradition, this strong relation between sign and signified has been considerably diluted and distorted since the Babel incident, so that inferences are only possible within very strict limits, known to only a few Sages.

Mediaeval Christian attempts to hang on to a methodology that was no longer so applicable (to the untrained user), and especially not to post-Babel languages (even though they retain reflections of the glory of the Holy Tongue), were therefore unjustified within the framework of the doctrines they claimed to echo. Judaism certainly never intended to foster superstition or 'blind faith' in ancient philosophers, quite the contrary. The World was created by God as an act of mercy, of love; it is essentially a benevolent, beautiful place, with a great potential for dignity and decency.

Further on, Foucault suggests that, as of the Renaissance, the written word acquired predominance over the spoken. That is doubtless true, what with the advent of printing and the spread of literacy. He is attempting to show that the written word made a quantum leap, at about the same time as the Sympathetic methodology reached its peak. Okay, but there was not such a sharp distinction as he is trying to imply. In that case, so what? There were shifts in emphasis, there always are; the overall cognitive process is in essence the same, with in it the seeds of many alternative expressions.

In any case, Foucault's statement that 'the Law was entrusted to the Tablets, not to men's memories' is inaccurate, from the Jewish point of view. For Jews, the oral transmission was always as weighty as the written one, if not more so (in the sense that those who lack the oral, cannot fully understand the scriptural). The relatively modern concentration on written texts must be viewed rather as resulting from a gradual breakdown in the social cohesion necessary for oral traditions; study became a more individual activity, and therefore one more dependent on the written word.

Lastly, Foucault points out that the assumption that words and things are related by virtue of 'resembling' each other began in the 17th century to be displaced. The relation gradually became more tenuous and arbitrary; though this tendency, he claims, has been somewhat prevented from excesses thanks to modern 'literature.' In my view, this 'symbolization of symbols' was a positive development in itself, though one which could be misinterpreted, and indeed has been by some.

Although modern language cannot claim an intrinsic power of representation of reality, it still depends for its meaningfulness on perceived, conceived or assumed distinct similarities between the objects it refers to. The sound and shape of the word is arbitrary and what we choose to attach it to is our prerogative; but the word remains meaningless if we are not agreed-upon using it to refer to some objective individual entity, or group of entities with distinctive common factors. Comparison and contrast remains the foundation of conceptual knowledge.

Thus, Professor Foucault is tending to over-generalize; he speaks in flourishes, *sans l'extrême rigueur de pensée qu'il se doit d'après ses propres arguments.* The relation between words and things, or knowledge and reality, was not understood by the pre-Classicals as simply as Foucault implies. It is not accurate to suggest that 'resemblance' (in the indiscriminate sense above described) characterized their *episteme* so thoroughly; there

were other points of reference too. For instance, causality is not mentioned by Foucault in this context; yet, Aristotelian influence did exist at the time.

3. Representing

By this term, Foucault formally intends the 'semiological' relation between a sign and its object. He claims that this relation had something to do with 'resemblance', prior to the 17th century and on; at which time a stricter version of similitude was adopted, the method of discriminate identification. This method, of cautious analysis of identities and differences, as suggested by the likes of Descartes and Hume (though with different emphases), was a new *episteme*.

Thus, in Foucault's intent, 'representing' is a neutral general term for the sign-object relation, however any period may believe that this relation is specifically established. It simply means 'taking the place of' or 'standing in for', without implying a re-presentation, in the sense of a similitude, between sign and object.

In any case, Foucault has confused the 'sign' in the sense of the walnut's shape being a sign *of* its medical qualities, with the 'sign' in the sense that a word is a sign *for* its object. The of/for difference in preposition is important; it makes two words out of the one, the noun 'sign'. Pre-Classical thinkers may have subscribed to the walnut-interpretation method, but it does not follow that this in any way modified the sign-object relation.

They were just accepting another kind of object, or phenomenon, which we no longer rely on so seriously; the 'archeologically'-implied relation of signification was unaffected. Foucault himself formally admits the perils of 'establishing discontinuities' particularly in the history of thought. Yet, the content of his thesis is replete with such 'arbitrary division'.

Thus, he characterizes pre-Classical thought as justified by the sum total of its parts, whereas the Classical 'exhaustive census' gave rise to 'absolutely certain knowledge.' Both of these characterizations are exaggerations. The two periods are not distinguishable with reference to these characteristics, because both of them involved both contextuality and enumeration to some extent.

Astrology and alchemy imply a looser, more poetic methodology; astronomy and chemistry, a more precise and mathematical logic. With regard to the 'representing' relation, which others have called more broadly 'signification,' it existed prior to science as well as in science. The difference between the two periods is this: the former was not as conscious of identities and differences as the latter; and the latter relied on 'resemblance' as much as the former, though in a more cautious and thoughtful manner.

Foucault presents Don Quixote as the first modern character of literature, as well as the last hanger-on to the methodology of consulting texts for an externally suggested world-view and behavior-pattern. He is depicted as formatting his thought and action, in slavish accord with the ideas and examples of ancients, and rejecting as unreal, as magic, any personal insights or perceptions which disagree with his loyalties. He is bound by resemblance to mythical characters and events; he reads nature through books, discarding independent epistemology or conscience.

Thus, Don Quixote suffers from a sort of insanity, an alienation into imagination and analogy. His fiction becomes a reality, when his early adventures are in turn published in book form while he is yet alive. We learn from this that language 'now possesses new powers.' In my view, all this is, again, exaggeration. Everyone relies to some extent on received knowledge, from previous generations or others in one's generation; everyone's behavior is to some extent influenced by other people, whether in writing, by speech, or by example.

It would therefore be unfair to characterize Don Quixote, or the *episteme* and period he represents, as peculiarly dependent and bumbling. He seems like a piously fanatic fool to our eyes; but who knows the inner development he was going through. Think for instance of the mediaeval churchman (Frollo, the cathedral's archdeacon) in Victor Hugo's *Notre Dame de Paris*. He is painted much more sympathetically, as a madly impassioned searcher; and he emerges as a credible construct (though ultimately tragic, destructive). Foucault has focused on just one possible characterization.

Furthermore, modern man is no less involved, in his own way. We all have our authorities, our points of reference, our trials and errors, our imaginations, our boundaries. That fact in itself does not disqualify someone; the only issue is how wisely we absorb others' contributions and handle our finitudes, how consciously and

selectively. People vary in intelligence or virtues; some make more mistakes than others. Every period has its achievements, and its limits. But nothing has changed, the epistemological background is the same; we are all to some extent Don Quixotes.

I mean, just look at the power exercised by today's media—novels, movies and T.V. Their whole *raison d'être* is producing role models, and it is no accident that actors are referred to as 'idols.' To suggest, as Foucault does, that we have become free of such dependencies is gross inaccuracy. Consider Jean-Paul Sartre's distress at the difficulty of spontaneity; a modern man, locked in a self-made prison of role-play. Sartre simply replaced traditional models with one of his own fancy; but the art of natural behavior still eluded him.

There is nothing intrinsically wrong in referring to tradition. The 'wisdom of the ancients' is neither proven nor disqualified by its antiquity. Many of the speculations of ancient philosophers are still of interest to us today; not merely as historical opinions, but because they continue to enrich and stimulate our thought. 'Authority' is often well earned. Scholarship did not suddenly die; and the proof is afforded by Foucault's own research into past thought. As Anatole France suggested:

> Any expression of an abstract idea can only be an allegory. By an odd fate, the very metaphysicians who think to escape the world of appearance are constrained to live perpetually in allegory. A sorry sort of poets, they attack the colors of the ancient fables, and are themselves but collectors of fables. Their output is mythology, an anemic mythology without body or blood. (Bentwich, 345.)

I am not trying to play down differences, but merely to put things in perspective. Let us continue. Foucault says, with reference to the Classical period as of the 17th century: 'there can be no sign until there exists a *known* possibility of substitution between two *known* elements.' The subject-object relation is brought into the equation between sign and signified. Thus, he in effect perceives a shift from *de re* modality to the logical, *de dicta* mode.

Signs were no longer 'representative,' in the sense of microcosmic reflections of objects, but more frankly conventional. The 'resemblance' factor was relatively diminished in the relation of signification. A sign (read: word), henceforth, contained within itself a statement of its function as a sign, as well as a statement as to what it specifically referred to; but otherwise its relation to the object was man-made.

Fair enough, but I disagree with Foucault's analysis. The natural causality referred to, when for instance we take a cry as a 'sign' of a baby—this is still with us, even today; it was not abandoned in the Classical period, and nor was the belief that 'if no one were to perceive' things, they would be 'just as much *there*.' Similarly, it would be inaccurate to say that logical modality was absent from pre-Classical thinking processes (witness Maimonides' critique of the Arab Mu'tazilites school, for instance).

It is true that philosophers like Descartes, Leibniz, Bacon, Berkeley, Locke, Hume, discussed the 'connections of ideas.' This was an outcome of their analysis of sensory-perception as a physiological process terminating in the production of mental images, called ideas. They did not see the paradox generated by this hypothesis, that if what we perceive are ideas, then how do we know of an object capable of producing them? It was an erroneous approach, which was only later corrected by a more Phenomenalist ordering of events.

But in any case, a distinction must be made between the methods professed by the philosophers of a certain period—their own understanding of what was going on in their milieu—and the methods actually used by human beings of the time, themselves included. The former belong to the history of explicit philosophy; the latter, more broadly to cultural history. These two processes are not always, if ever, at the same stage of development. Human methodology changes little, shifting in emphasis, but not in its essential components.

For these reasons, it seems to me that Foucault's suggestion that the semiological relation itself underwent a radical structural change is rather hyperbolic. The potential for words to serve as 'transparent and neutral' symbols coexisted with the more florid view of language as 'one of the figurations of the world'—certainly the former is found in Aristotle, at least. And as for applying 'one and the same name... indifferently to things that are not of the same nature'—it is an error we all still occasionally make.

Now, Foucault offers the following epistemic constructs, as characteristic of the new order. Instead of an emphasis on 'resemblance' (to ridiculous extremes), a more pondered observation of differences. Instead of far-fetched and vague analogies, 'complete enumeration' of cases and the elements in each case, with a more discriminating eye. Separation of historical and scientific research, so that the opinions of past authors are regarded with a more critical eye, if at all considered; they are no longer authorities, though they may remain contributors.

Science orders information either in the way of a *mathesis*, with reference to precise measurement of numbers or degrees; or at least in the way of a *taxonomia*, a more analytical ordering of data with reference to qualitative identities and differences. Additionally, the *genesis* of things and ideas must be considered; this is the chronological and epistemological aspect of science. The whole has to be empirical, yet imagination is also required to reconstitute an order.

The Rationalist/Empiricist divisions between Classical philosophers, then, reflect different emphases within that framework; but in any case, according to Foucault, both differ radically from the preceding period of 'divination' methodologies, which made more comparisons than distinctions and failed to carefully observe the object itself before flying off into romantic associations.

However, Hume's comment on the pretensions of the new philosophers is *apropos*:

> Let the philosopher pride himself on his precision as much as he will... I nevertheless defy him to make a single step in his progress without the aid of resemblance.

Similarity (moderated by dissimilarity) was always, and continues to be, the basis of all conceptual knowledge. It is possible that the preceding period involved more imagination of resemblance than was justified, but it is impossible for the basic relations to change.

Formally, a word X is related to some pointed-to thing or group of things, by the statement 'X is a sign for this/these thing(s)'—this is how the relation of signification is defined, without any presuppositions as to the particular configurations of the thing(s) referred to, or the basis for their being grouped together. It is true, as Wittgenstein objected, that indication (pointing to something, saying 'I mean this') is itself a vague act; but context-changes gradually purify such ideas of possible ambiguities or equivocations.

The label may or may not itself contain other relations (like similarity of sound or shape) to its object; and putting a label on a group of objects does not guarantee that they possess a distinct commonalty other than the arbitrary label itself.

According to Foucault, the relation of signification became a component of the sign, instead of a copula linking sign and object. He claimed that 'no specific activity of consciousness can ever constitute a signification,' and inferred that signs changed from ternary organization to a binary one. But this seems a forced, hair-splitting argument to me. It matters little whether we regard the copula as in or out of the sign-term, or its genesis as arbitrary or imposed by some resemblance between sign and signified. There is always a final implicit thought 'X is to be the sign for the indicated thing(s)'.

I am not at all convinced that the *Logique du Port-Royal* was introducing a novel sign-object relation. It states: 'The sign encloses two ideas, one the thing representing, the other the thing represented.' I do not see this definition as formally excluding the Renaissance interest in what makes possible 'to see in the first the mark of the second.' The Renaissance's specific answer to that question may have been fantasy-prone, but the question in any case remains operative.

Funnily enough, in my view, the Classical philosophers unwittingly created a new problem, by confusing things and ideas. The above *Port-Royal* definition is a case in point. The sign 'encloses' the *idea* of 'the thing represented,' they said; but in fact the sign is supposed to refer to 'the thing' itself, not to the idea of the thing. Whether a mental entity called an 'idea' stands between the label and its object is an open question. A broad, neutral definition cannot at the outset exclude a direct subject-object relation.

Ideas may exist, as memories of previous perceptual and conceptual acts, without implying that these acts require intermediaries. Ideas may be sometimes formed on the basis of imagined realignments of the mental images of some concrete and/or abstract components of things; but it does not follow that they are always so formed.

I am not, of course, denying the great value of epistemological and philological contributions of the Enlightenment period, but merely to some extent disagreeing with Foucault's interpretations of these developments.

14. Bolzano's Semantics Concepts

This essay was developed in 2003 and 2005 from notes written in March 1998, after attending a lecture about Bernhard Bolzano (Bohemia, 1741-1848), a logician I'd never heard of at the time, given by Professors Barnes and Mulligan of Geneva University[1]*. I was disappointed by their seeming inability to unravel for their students the confusions in Bolzano's approach. Needless to say, I am here only concerned with specific proposed logic concepts of his, and do not intend any criticism of his mathematics or other writings.*

1. "Propositions-in-Themselves"

I would like to propose here a brief critique of Bolzano's concepts for semantics[2].

In common discourse, the term "proposition" is used in relation to an act of consciousness, which may or not be expressed in words – it is never used with reference to the object of such act, be that object real or imaginary.

The underlying object of a proposition, it should be stressed, is essentially *relational*. Categorical propositions concern relations between subjects and predicates (whether the latter concern attributes, actions, or any other category); hypothetical propositions concern those between prior propositions (categorical or otherwise); and so forth.

Bolzano takes off from the expressions "a proposition apprehended" or "a proposition uttered", to suggest a concept of "proposition" without any such specification (*tout-court*), or "proposition-in-itself", or again "objective proposition". However, to begin with, that leap is illicit: from the given concepts, we would only normally elicit a genus "proposition", and not a concept other than or beyond the given two, as he attempts to do here.

The concept he refers to, I submit, is none other than that of *the object* of the thought or spoken proposition, i.e. what it tells us. The situation he is considering is, quite simply, that of ***an object that has not yet been apprehended or thought, and which perhaps never will be.*** We can quite imagine such a situation, as there are objects we are conscious of today which we ignored yesterday, or that we are aware of but other people are not – and, in view of our cognitive and existential limitations, by extrapolation, we can well assume that there are objects none of us will ever get to apprehend.

We could, in the limit, refer to such objects as "**potential but unactualized propositions**". This is assuming that all objects are in principle *knowable*, which proposition is open to much doubt or at any rate hard to demonstrate – but let us, for the sake of argument (as it is not the essence of the issue here), accept it as conceivable. Such doubt should dissuade us to apply the term "proposition" to objects of this sort (i.e. unknown objects); but in any event, we can in no wise omit to specify that such propositions are to be distinguished from *actual* propositions by being *merely* potential.

It follows that the term "propositions-in-themselves" is a misnomer. The correct term would be simply "propositions", provided we had *previously* clearly defined this term as including both actual propositions (thought or spoken) and potential-but-not-actual propositions. Propositions *so defined* are true if they are realistic (i.e., in common parlance, if they have a correspondent in reality – but, in a more scientific approach, roughly put, if in the given context of information they are best classified as thus), and they are false if their content is (or is found to be) merely imaginary.

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1 Based on a reading of: A. Wedberg's *A History of Philosophy* (Oxford: Clarendon, 1984). Vol. 3, pp. 57-61.

2 Which I believe Bolzano presented in 1837, in his *An Attempt at a New Presentation of Logic.*

Note also: one cannot discuss what Bolzano calls a "proposition-in-itself" without expressing it in thought or speech (witness his own definition of them as "assertions"). For this reason, too, the term he proposes is misleading: we might only, at best, accept the label "potential but not actual propositions".
Briefly put, then, *actual* propositions would be called true or false if they are real or imagin***ed***, respectively; whereas potential-but-not-actual propositions would be called true or false if they are real or imagin***able***, respectively. Thus, the definition of truth is the same in both cases, but that of falsehood is slightly different: for actuals, it is actual imagination; whereas for merely-potentials, it is the mere potential of imagination.
Concerning the latter, it should be added that the existence of an object not yet encountered is *hypothetical*. It is an inductive extrapolation from our past cognitions, from the fact that in the course of our lives we have come to know new objects previously unknown, or that we know things others ignore or others claim to know things we ignore.
There is therefore no call for a varied terminology regarding truth and falsehood, as suggested by Bolzano[3]. No need to get into a deeper discussion regarding the concepts of truth and falsehood, here.[4]
With regard to the thesis by Bolzano (and others) that propositions are subdivided into terms (i.e. that ideas are parts of propositions), I will not here comment.[5]
In passing, let me mention my agreement that not all propositions are of the form "S is P". This form is reserved for the expression of a specific kind of relation, viz. the *classificatory* (broadly-speaking). A colloquial proposition like "it rains" attempts to express in such habitual form an event. More precise would be something like "Water is dripping or pouring down from the clouds in the sky". But the "it" involved may not be the sky, but simply the screen in front of our face in which the event of raining water occurs.

2. "Ideas-in-Themselves"

Turning now to Bolzano's treatment of "ideas" - the issues are very similar.
It is clear in the above that I am using the term "object" (which, in my view is best retained, without expanding the term "proposition" as suggested by Bolzano) as widely as possible.
Now, a proposition (in the normal sense, or a thought/spoken proposition in Bolzano) is *assertoric*, essentially in that it claims that the event or relation it expresses *really exists*. If, "in fact" (i.e. in the widest possible context of phenomenal knowledge) it does exist, the proposition is said to be true; otherwise, the event or relation it asserts is regarded to have been a mere product of the imagination, an illusion, and the proposition is said to be false.
Similarly for a term (or phrase), thought or spoken. It may refer to something "in fact" existing, or it may be a mere construct of the imagination. In the former case, it indeed has an object; in the latter case, it gives the illusion of having an object, but doesn't. Thus, "ideas" (if we must use this tortured word) are like propositions exactly, in that they implicitly assert an existence, though they may in fact merely refer to a construct.
As we saw, a relational object, be it real (demonstrable) or imaginable, which has *not* been thought or uttered (in theory – though that is precisely what we are doing the moment we but mention it for the present discussion), cannot be called a "proposition" (and much less a "proposition-in-itself", implying it to be even more of a proposition than a merely actual proposition!). It is *sensu stricto* erroneous to call it that; at best (though preferably not), we might refer to it as a "potential but unactualized proposition".
Likewise, the object, real or imaginable, of an "idea" cannot properly be called an idea until a perceptual or conceptual cognition of the object actualizes as such. Here again, if we wanted to be very generous, we might refer to "potential but unactualized ideas", but certainly not to "ideas-in-themselves".
The proof that this proposal of Bolzano's is confusing and unacceptable is that it leads to a distinction (made by him) between an "idea-in-itself" and its "object"! Once the *verbal* difference is generated, a corresponding *material* difference is presumed, even though in fact the object of both these terms is one and the same.

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3 Or is it Wedberg? p. 59.
4 I refer you to my work, *Future Logic*, e.g. chapter 21.
5 See *Future logic*, e.g. p. 248, showing the impossibility in certain cases of such processes.

The examples brought to bear by Bolzano are not convincing, but emerge from yet more confusions in his mind. He does not realize that an empty class is a mental (imaginary) construct without demonstrable (real) referents. He does not understand that a general idea is not an "idea-in-itself" with many objects – but more simply a concept in relation to which all the objects referred to count as "one", due to their abstract commonalities.

Bolzano's expression "ideas-in-themselves" is as artificial and confusing a term as "propositions-in-themselves". It refers at best to "ideas" defined as including both actual ideas (i.e. which have been thought or spoken, rightly or wrongly) and potential but not actual ideas (which *could be* thought or spoken, rightly or wrongly, *but have not been*).

But to think of objects or constructs which have not been apprehended or uttered as "ideas", let alone "ideas-in-themselves", is not advisable. The danger being that of reification – once a term is introduced, it is taken to refer to something additional. This is exactly what happened with Bolzano: the idea-in-itself is thenceforth distinct from the object.

It should be added that the expression "having an object", which Bolzano uses, is ambiguous. All more or less meaningful terms, phrases or propositions have an object of sorts – but these objects are not epistemologically or ontologically always on the same plane.

Sometimes the object referred to is no more than a name or verbal construct; sometimes, it is a vague or clear mental image, a set of imagined sights and sounds. Sometimes, the word refers us to a hypothetical entity within a complex scientific theory, a conceptual construct at different stages of validation; sometimes, the object is a perceptible or very well established material body. Thus, the "object" referred to could in fact be anything from a reality to an illusion, including all the intermediate statuses of appearance in between.

As our above clarification implies, "ideas" as Bolzano presents them are in fact *one and the same as* "objects" (in the wide sense including "real objects" and "imaginary constructs", of course), whether they come to mind or remain unknown. But Bolzano's hunt for examples to support his discriminative thesis diverts the discussion, raising issues regarding the statuses of empty classes and general classes.[6]

Empty classes, in my view, roughly put, are mental constructs based on conceptual manipulations (which may be based in whole or in part on perceptual rearrangements). They are indeed "ideas", but their objects are not "real objects" only at best "imaginary constructs". They are empty of objective content, though they emerge from some fantasy (and in this latter sense – alone – have a content of sorts).

In the case of concrete individuals or limited groups, the idea "refers to" or "means" certain objects. In the case of general classes, we suppose the idea-object relationship to be the same, though the object (a universal or an open-ended group) is more difficult to pinpoint and understand. They are supposed "abstractions"– projected common factors, based on our apparent capacity to measure the underlying units against each other.

But in any case, the distinction has no bearing on the issue of Bolzano's split between idea (in the large sense adopted for him) and object, because his discussion started with a broad concept of object such as to include *any type of* object. He was only concerned thus far with whether the object was thought/uttered *or not*.

He cannot now change the sense of his term, so that singular and plural objects acquire distinct properties in this respect! Indeed, rather he should have at this stage gone into the varieties in his use of the term object, distinguishing between those that are imaginary from those that are demonstrable, and so forth. All this goes to show that he got caught up in misleading categorizations.

Lastly note, Bolzano's consideration of compound terms (say, "XY" – e.g. "blue flower") as not propositions, and therefore neither true nor false, is also misleading. Terms, single or compound, are not *per se* true or false, but if they *imply* a proposition (such as "Xs exist" or "some things are Y" or "there are Xs that are Y") they suggest or presuppose some truth or falsehood. Note well: the proposition concerned may be true (as in the case of "some flowers are blue"), *or it may well be false* (as in the case of "some flowers are talkative").

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[6] I refer you to the examples given by Wedberg in this context.

3. The Issue of Time

Once we have understood what it is that Bolzano has in mind when he refers to "propositions-in-themselves", it is relatively easy to resolve his questions concerning their being in time or beyond time.

That *actual* propositions exist in time is not open to doubt, they come to be when they are thought (and occasionally, spoken) and cease to be when they are no longer thought (let alone spoken). This refers to the mode of existence we call actuality, specifically.

We may say that *in the mode of existence we call potentiality*, they existed *before* they were ever thought/spoken (else they would never have been), and also will exist *after* they are last thought/spoken, at least *so long as* it is still potential for anyone to think/speak them.

But in any case, this potential mode of existence is ***not*** an actual mode of existence. Similarly for propositions that are potential but have never been actualized. If our definition of timelessness is such that it refers to the existence of things in the weaker mode of being that we call potentiality, then this is indeed "outside time".[7]

In other words, the issue raised by Bolzano is not specific to this area of discussion, but concerns *all* cases of "potentiality". The important thing is not to permit ourselves equivocations and confuse the terms "exists actually" and "exists potentially".[8]

The following may be added, regarding the temporality or timelessness of his "propositions in themselves".

Consider a proposition that is *not* actual (only potential) – i.e. which no one has wordlessly thought or explicitly formulated:

- Does it exist? Only, at best, potentially (by our premise).
- Did it begin to exist? Not yet, though it might one day become actual.
- Did it always exist? Only as a potential of the universe, since (by definition) it has not yet actualized.
- Is it "outside time" No, insofar as its existence is possible only *within* this universe.

Here again, then, Bolzano is misappropriating a concept. The issue of time raised here (as already pointed out) is applicable not only to "propositions in themselves" (supposing that we at all grant the concept), but to all unactualized potentialities.

In my *Future Logic*[9], I show that we cannot regard such potentialities as 'casting an actual shadow' into the 'nature' of the thing, i.e. into some static essence; instead, we must regard potentiality as another, lighter form or degree of being. This, I may add, is not timelessness, since some potentialities are irretrievably *lost* anyway, i.e. there exists a phenomenon of 'loss of powers'[10].

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7 But the concept can be criticized further - it is not the issue here, so I won't.

8 For further discussion of this point, again see *Future Logic*, e.g. pp. 413-415.

9 See chapter 45.3 on Impermutability.

10 The reverse phenomenon of 'acquisition of powers' could also be pointed to as an argument in favor of the idea that existence has degrees. Some potentialities are *more remote* than others, requiring more work to be brought into near actuality (readiness or immediate power) or into full actuality (actualization). This concept is usually applied to volitional contexts, but sometimes also more broadly.

Ruminations was started in February and completed in April 2005. Various additions to it were made in the same year.

BUDDHIST ILLOGIC

A Critical Analysis of Nagarjuna's Arguments

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Abstract

The 2nd Century CE Indian philosopher Nagarjuna founded the Madhyamika (Middle Way) school of Mahayana Buddhism, which strongly influenced Chinese (Ch'an), Korean (Sôn) and Japanese (Zen) Buddhism, as well as Tibetan Buddhism. Nagarjuna is regarded by many Buddhist writers to this day as a very important philosopher, who they claim definitively proved the futility of ordinary human cognitive means.

His writings include a series of arguments purporting to show the illogic of logic, the absurdity of reason. He considers this the way to verbalize and justify the Buddhist doctrine of "emptiness" (*Shunyata*). These arguments attack some of the basic tenets and techniques of reasoning, such as the laws of thought (identity, non-contradiction and the excluded middle), conceptualization and predication, our common assumptions of self, entities and essences, as well as our beliefs in motion and causation.

The present essay demonstrates the many sophistries involved in Nagarjuna's arguments. He uses double standards, applying or ignoring the laws of thought and other norms as convenient to his goals; he manipulates his readers, by giving seemingly logical form (like the dilemma) to his discourse, while in fact engaged in *non-sequiturs* or appealing to doubtful premises; he plays with words, relying on unclear terminology, misleading equivocations and unfair fixations of meaning; and he 'steals concepts', using them to deny the very percepts on which they are based.

Although a critique of the Madhyamika philosophical interpretation and defense of "emptiness", *Buddhist Illogic* is not intended to dissuade readers from Buddhism. On the contrary, its aim to enhance personal awareness of actual cognitive processes, and so improve meditation. It is also an excellent primer on phenomenological epistemology.

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Foreword

This essay is a critical review of some of the main arguments proposed by the Indian Buddhist philosopher **Nagarjuna** (c. 113-213 CE), founder of the **Madhyamika** (Middle Way) school, one of the Mahayana streams, which strongly influenced Chinese (Ch'an), Korean (Sôn) and Japanese (Zen) Buddhism, as well as Tibetan Buddhism. Specifically, the text referred to here is ***Empty Logic*** - *Madhyamika Buddhism from Chinese Sources* (Delhi: Motilal Banarsidass, 1991) by Hsueh-li Cheng, of Hawaii University (Hilo). The main source-texts of this school of thought, to which Cheng of course often refers, are the "three treatises" – the *Middle Treatise*, the *Twelve Gate Treatise* and the *Hundred Treatise*.[1]

The title *Empty Logic* was not intended pejoratively by its author, but simply to mean 'logic of emptiness', the term "emptiness" (*Shunyata*) referring to the Buddhist doctrine that (briefly put, very roughly) things have no abiding core, no essence, no fixed nature. Cheng's work is a clear exposition of Madhyamika history and logical techniques, but it makes no attempt to criticize those techniques. All criticism of Madhyamika or Buddhist logic, here, is my own.

The present essay is not a religious tract and has no polemical intent. It is a work of philosophy, a fair-minded logical evaluation of certain propositions and arguments taken as philosophical positions open to discussion like any other. It examines and discusses a goodly array of Buddhist, and in particular Madhyamika, doctrines, but does not pretend to be an exhaustive treatment of all doctrines or of all aspects of those dealt with.

However, I do not attempt here to develop a historical perspective, or to list the various tendencies and their interrelations. Cheng's book includes an interesting exposition of the development of Madhyamika philosophy, from Nagarjuna in the 2nd century CE through to the Yogachara school and on. However, he fails to investigate in sufficient detail the development of Buddhist philosophy prior to Nagarjuna, barely mentioning several centuries of earlier Theravada (Hinayana) philosophy and the early phases (starting 1st cent. CE, and before) of Mahayana reaction (e.g. the Mahasanghikas)[2]. To better understand Nagarjuna's motives and goals, it would be well to be acquainted with this background[3].

My naming the present essay *Buddhist Illogic* should not be taken to imply that I consider all Buddhist philosophy or even all Madhyamika as illogical. It merely reflects my focus here on some of the (many) illogical arguments used in Nagarjuna's discourse. Indeed, some of Nagarjuna's arguments and beliefs have been refuted or rejected by other Buddhist philosophers. Buddhist philosophy is not monolithic, but a constellation of philosophies with as their common ground the (alleged) pronouncements of Buddhism's founder. I do here challenge some underlying Buddhist doctrines, but only incidentally, not systematically.

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[1] Here abbreviated to MT, TGT and HT, respectively. These texts are not all by Nagarjuna and no longer exist in the Sanskrit original, but in Chinese translation (by Kumarajiva, dating from 409 CE). Thus, the main verses of the first treatise (MT) were by Nagarjuna; its commentaries were by Pingala. The whole second treatise (TGT) was by Nagarjuna. The third treatise's (HT) main verses were by Aryadeva and its commentaries were by Vasu. I shall be content to refer to Cheng, mentioning his occasional references these treatises; but, in view of Cheng's evident competence, I shall barely distinguish between his say-so and his rare word-for-word quotations of Nagarjuna.

[2] Mahayana means 'great vehicle', Hinayana means 'small vehicle'. The latter may be taken as a pejorative term coined by the Mahayanists, implying that their interpretation of Buddhism is superior. The alternative label, Theravada, is preferable. In my view, Mahayana was in many respects a more revolutionary than evolutionary development.

[3] A text I can recommend is Part I of *The Diamond Sutra* by Mu Soeng (Somerville, MA: Wisdom, 2000). It is also very instructive to look at the development of Buddhism from a point of view of comparative religion. For instance, the Mahayana argument "that their sutras needed to be kept secret for five hundred years" (p. 24) is familiar to students of Judaism (a similar argument is used there, e.g. to explain the historically late appearance of the 'Ashuri' Hebrew script used in Torah scrolls, and in other contexts).

I would have named this essay less pejoratively 'Buddhist Logic' if I had found some interesting new thought forms to report. Buddhism and Nagarjuna do indeed use valid as well as invalid forms of reasoning, but these forms (those I found so far) are all familiar to us today, and so not notable except for historical purposes (where we would try and determine whether Buddhist usage antedates usage in Greek or other writings). However, my main justification is that much of Buddhism itself, and particularly Nagarjuna's version of it, cheerfully proclaims itself free of or beyond logic, or illogical and even anti-logical.

On a personal note, I want to stress my admiration for Buddhism in general, which has taught me much, both in the way of living skills and through its philosophical insights. So I cannot be accused of approaching this subject with any antagonistic prejudice. I read *Empty Logic* eager to learn from it, rather than to find fault with it. As a philosopher and logician I am however duty bound to analyze and judge philosophies dispassionately, and this is what I do here. Generally speaking, I have little interest in criticizing other people's philosophical works, because I could write thick volumes doing so. Life is unfortunately too short for that, so I prefer to pass it developing a constructive statement. Nevertheless, one generally learns a lot through debate, and I can say that challenging Nagarjuna has helped me to clarify various philosophical problems and possible solutions.

Finally, let me say that the message of "Buddha" (the enlightened) Siddhartha Gautama (563-483 BCE), about "emptiness", which as is well known is essentially non-verbal, should not be confused with Nagarjuna's or any other writer's attempted philosophical interpretation, explanation and justification of related ideas. Thus, to refute the latter does not necessarily deny the former.

1. The tetralemma

Western philosophical and scientific thought is based on Aristotelian logic, whose founding principles are the three "Laws of Thought". These can be briefly stated as "A is A" (Identity), "Nothing is both A and non-A" (Non-contradiction) and "Nothing is neither A nor non-A" (Exclusion of the Middle). These are not claimed as mere hypotheses, note well, but as incontrovertible premises of all rational human thought[1].

Religions like Judaism, Christianity and Islam, even while adhering to these laws in much of their discourse and paying lip-service to them, in their bids to interpret their own sacred texts and to make their doctrines seem reasonable to their converts, have often ignored these same laws. This is especially true of mystical trends within these religions, but many examples could be given from mainstream writings. The same can be said of some aspects of Buddhist philosophy.

The *tetralemma*[2] is a derivative of the laws of thought, with reference to any two terms or propositions, labeled A and B, and their opposites non-A and non-B. Four combinations of these four terms are conceivable, namely "A and B" (both), "non-A and non-B" (neither), "A and non-B" and "non-A and B" (one or the other only). According to Aristotelian logic, these four statements are incompatible with each other (*only one of them can be true*, because if two or more were affirmed then "A and non-A" or "B and non-B" or both would be true, and the latter implications are self-contradictory) and exhaustive (*at least one of them must be true*, since if they were all denied then "not A and not non-A" or "not B and not non-B" or both would be true, and the latter implications go against the excluded middle).

Now, what Nagarjuna does is insert the term A in place of B (i.e. he takes the case of B = A), and effectively claim that the above four logical possibilities of combination apply in that special case – so that "A and A (=B)", "non-A and non-A (=non-B)", "A and non-A (=non-B)", "non-A and A (=B)" seem logically acceptable. **He then goes on to argue that there are four existential possibilities: affirmation of A (A + A = A), denial of A (non-A + non-A = non-A), both affirmation and denial of A (A and non-A) and neither affirmation nor denial of A (not A and not non-A).** He is thus apparently using the principles and terminology of common logic to arrive at a very opposite result. This gives him and readers the impression that it is quite reasonable to both affirm and deny or to neither affirm nor deny.

But in Aristotelian logic, the latter two alternatives are at the outset excluded – "both A and non-A" by the Law of Non-contradiction and "neither A nor non-A" by the Law of the Excluded-Middle – and the only logical possibilities left are "A" or "non-A". The anti-Aristotelian position may be viewed, in a positive light, as an anti-Nominalist position, reminding us that things are never quite what they seem or that things cannot be precisely classified or labeled. But ultimately, they intend the death of Logic; for without the laws of thought, how are we to distinguish between true and false judgments?

> The law of identity "A is A" is a conviction that things have some identity (whatever it specifically be) rather than another, or than no identity at all. It is an affirmation that knowledge is ultimately possible, and a rejection of sheer relativism or obscurantism. Nagarjuna's goal is to deny identity.
>
> It should be noted here that Aristotle is very precise in his formulation of the law of contradiction, stating in his *Metaphysics* "The same attribute cannot *at the same time* belong and not belong *to the same subject in the same respect*" (italics mine). Thus, an alternative statement of the laws of thought would be the 'trilemma' (let us so call it) "*either wholly A, or wholly non-A, or both partly A and partly non-A*", which excludes the fourth alternative "both wholly A and wholly non-A". The Buddhist attack on the laws of

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[1] See my *Future Logic* (Geneva: Author, 1996. Rev. ed.), ch. 2 and 20, and later essays on the subject (published on my website www.thelogician.net).

[2] See Cheng, pp. 36-38, on this topic. He there refers to MT opening statement, as well as XVII:12a and XXIII:1a. Etym. Gk. *tetra* = four, *lemma* = alternatives. Term coined in contrast to the dilemma "A or non-A".

> thought draws some of its credibility from the fact that people subconsciously refer to this 'trilemma', thinking superficially that indeed opposite things may occur in the same place at different times or at the same time in different places or in various respects, without thereby giving rise to logical difficulty incapable of resolution. But it should be clear that the Buddhist position is much more radical than that, accepting thoroughgoing antinomy.
>
> Similarly with regard to the law of the excluded middle, which affirms the situation "neither A nor non-A" to be impossible *in fact*. People are misled by the possibility of uncertainty *in knowledge*, as to whether A or non-A is the case in fact, into believing that this law of thought is open to debate. But it must be understood that the thrust of this logical rule is inductive, rather than deductive; i.e. it is a statement that *at the end* of the knowledge acquisition process, either "A" or "non-A" will result, and no third alternative can be expected. It does not exclude that *in the interim*, a situation of uncertainty may occur. Nagarjuna's position exploits this confusion in people's minds.

Nagarjuna interprets the limitation implied by the dilemma "A or non-A" as an arbitrary 'dualism' on the part of ordinary thinkers[3]. It only goes to show that he misunderstands formalization (or he pretends to, in an attempt to confuse gullible readers). When logicians use a variable like "B" and allow that "non-A and B" and "A and non-B" are both in principle possible, they do not intend that as a generality applicable to *all* values of B (such as "A"), but only as a generic statement applicable to *any consistent* values of B. In the specific case where B = A, the said two combinations have to be eliminated because they are illegal (i.e. breach two of the laws of thought).

The above-stated property of symbols, i.e. their applicability only conditionally within the constraints of consistency, is evident throughout the science of formal logic, and it is here totally ignored by Nagarjuna. His motive of course was to verbalize and rationalize the Buddha's doctrine that the ultimate truth is beyond *nama* and *rupa*, name and form (i.e. discrimination and discourse), knowable only by a transcendental consciousness (the Twofold Truth doctrine). More precisely, as Cheng emphasizes, Nagarjuna's intent was to show that logic is inherently inconsistent and thus that reason is confused madness to be rejected. That is, he was (here and throughout) not ultimately trying to defend a tetralemma with B equal to A – or even to affirm that things are both A and non-A, or neither A nor non-A – but wished to get us to look altogether beyond the distinctions of conceptualization and the judgments of logic.

But as above shown he does not succeed in this quest. For his critique depends on a misrepresentation of logical science. He claims to show that logic is confused and self-contradictory, but in truth what he presents as the thesis of logical science is not what it claims for itself but precisely what it explicitly forbids. Furthermore, suppose logical theory did lead to contradictions as he claims, this fact would not lead us to its rejection were there not also a tacit appeal to our preference for the logical in practice. If logic were false, contradictions would be acceptable. Thus, funnily enough, Nagarjuna appeals to our logical habit in his very recommendation to us to ignore logic. In sum, though he gives the illusion that it is reasonable to abandon reason, it is easy to see that his conclusion is foregone and his means are faulty.

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[3] It is misleading to call this a 'duality' or 'dichotomy', as Buddhists are wont to do, because it suggests that a unitary thing was arbitrarily cut into two – and incidentally, that it might just as well have been cut into four. But, on a perceptual level, there is no choice involved, and no 'cutting-up' of anything. A phenomenon appearing is *one single* thing, call it '**a**' (a proper name, or an indicative 'this'), and not a disjunction. The issue of 'dichotomy' arises only on a conceptual level. *Negation* is a rational act, i.e. we can only speak of 'non-**a**', of what does not appear, by first bringing to mind something '**a**', which previously appeared (in sensation or imagination). In *initial conceptualization*, two phenomena are compared and contrasted, to each other and to other things, in some respect(s); the issue is then, are they similar enough to each other and different enough from other things to be judged 'same' and labeled by a general term (say 'A'), or should they be judged 'different' or is there an uncertainty. At *the later stage of recognition*, we have to decide whether a third phenomenon fits in the class formed for the previous two (i.e. falls under 'A') or does not fit in (i.e. falls under 'non-A') or remains in doubt. In the latter case, we wonder whether it is 'A' or 'non-A', and forewarn that it cannot be both or neither.

2. Neither real nor unreal

But Nagarjuna also conceives ultimate reality ("emptiness"[1]) as a "middle way"[2] – so that the world of experience is neither to be regarded as real, nor to be regarded as unreal ("there is nothing, neither mental nor non-mental, which is real" and it "cannot be conceived as unreal," reports Cheng). In this context, Nagarjuna is clearly relying on one of the above-mentioned logically impossible disjuncts, namely "neither A nor non-A" (be it said in passing). I want to now show why Nagarjuna's statement seems superficially reasonable and true.

As I have often clarified and explained[3], knowledge has to be regarded or approached phenomenologically (that is the only consistent epistemological thesis). We have to start by acknowledging and observing *appearances*, as such, without initial judgment as to their reality or illusion. At first sight all appearances seem *real* enough. But after a while, we have to recognize that some appearances conflict with other appearances, and judge such appearances (i.e. one or more of those in conflict) as *illusory*. Since there is nothing in our 'world' but appearances, all remaining appearances not judged as illusions (i.e. so long as they are not logically invalidated by conflicts with other appearances) maintain their initial status as realities.

That is, the distinction between appearances as realities or illusions emerges within the world of appearances itself, merely classifying some this way and the rest that way. We have no concept of reality or illusion other than with reference to appearance. To use the category of reality with reference to something *beyond* appearance is concept stealing, a misuse of the concept, an extrapolation which ignores the concept's actual genesis in the context of appearance. To apply the concept of illusion to *all* appearances, on the basis that some appearances are illusions, is an unjustified generalization ignoring how this concept arises with reference to a specific event (namely, inconsistency between certain appearances and resulting diminishment of their innate credibilities). Moreover, to claim that no appearances are real or that all are illusions is self-defeating, since such claim itself logically falls under the category of appearance.

The illusory exists even though it is not reality – it exists as appearance. The real is also apparent – some of it, at least. Therefore, appearance per se is neither to be understood as reality (since some appearances are illusory), nor can it be equated to illusion (since not all appearances have been or can be found illusory). Appearance is thus the *common ground* of realities and illusions, their common characteristic, the dialectical synthesis of those theses and antitheses. It is a genus, they are mutually exclusive species of it. (The difference between appearance and existence is another issue, I have dealt with elsewhere – briefly put, existence is a genus of appearance and non-appearance, the latter concepts being relative to that of consciousness whereas the former is assumed independent.)

None of these insights allows the conclusion that appearances are "neither real nor unreal" (granting that 'unreal' is understood to mean 'non-real'). All we can say is that some appearances are real and some unreal. Formally, the correct logical relation between the three concepts is as follows. *Deductively*, appearance is implied by reality and illusion, but does not imply them; for reality and illusion are contradictory, so that they cannot both be true and they cannot both be false. Moreover, *inductively*, appearance implies reality, until and unless it is judged to be illusion (by virtue of some inconsistency being discovered).

More precisely, all appearances are initially classed as real. Any appearance found self-contradictory is (deductively) illusory, and its contradictory is consequently self-evident and (deductively) real. All remaining appearances remain classed as real, so long as uncontested. Those that are contested have to be evaluated dynamically. When one appearance is belied by another, they are both put in doubt by the conflict between them,

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[1] Beyond consciousness of "Shunyata" is a more vivid awareness called "Mahamudra", according to Chögyam Trungpa, in *Illusion's Game* (Shambhala: Boston, 1994). But such refinements need not concern us here.

[2] See Cheng, pp. 38-39, on this topic. He there refers to MT XIII:9a and XVIII:7.

[3] See my *Future Logic*, ch. 60-62, and later essays on the subject.

and so both become initially *problematic*. Thereafter, their relative credibilities have to be tentatively weighed in the overall context of available empirical and rational knowledge – and repeatedly reassessed thereafter, as that context develops and evolves. On this basis, one of these appearances may be judged more credible than the other, so that the former is labeled *probable* (close to real) and the latter relatively *improbable* (close to illusory). In the limit, they may be characterized as respectively effectively (inductively) real or illusory. Thus, reality and illusion are the extremes (respectively, 100% and 0%) in a broad range of probabilities with many intermediate degrees (including problemacy at the mid-point).

> To be still more precise, *pure percepts* (i.e. concrete appearances, phenomena) are never illusory. The value-judgment of 'illusory' properly concerns concepts (i.e. abstract appearances, 'universals') only. When we say of a percept that it was illusory, we just mean that we misinterpreted it. That is, what we initially considered as a pure percept, had in fact *an admixture of concept*, which as it turned out was erroneous. For example, I see certain shapes and colors in the distance and think 'here comes a girl on a bike', but as I get closer I realize that all I saw was a pile of rubbish by the roadside. The pure percept is the shapes and colors I see; the false interpretation is 'girl on bike', the truer interpretation is 'pile of rubbish'. The initial percept has not changed, but my greater proximity has added perceptual details to it. My first impression was correct, only my initial judgment was wrong. I revise the latter concept, not through some superior means to knowledge, but simply by means of *further perception and conception*.
>
> Strictly speaking, then, perception is never at issue; it is our conceptions that we evaluate. It is in practice, admittedly, often very difficult to isolate a percept from its interpretation, i.e. from conceptual appendages to it. Our perception of things is, indeed, to a great extent 'eidetic'. This fact need not, however, cause us to reject any perception (as many Western philosophers, as well as Buddhists, quickly do), or even all conception. The conceptual 'impurities' in percepts are not necessarily wrong. We know them to have been wrong, when we discover a specific cause for complaint – namely, a logical or experiential contradiction. So long as we find no such specific fault with them, they may be considered right. This just means that we have to apply the rules of adduction[4] to our immediate interpretations of individual percepts, just as we do to complex theories relative to masses of percepts. These rules are universal: no judgment is exempt from the requirement of careful scrutiny and reevaluation.

Now, judging by Cheng's account and certain quotations of Nagarjuna therein, we could interpret the latter as having been trying to say just what I have said. For instance, Cheng writes[5]: "What Nagarjuna wanted to deny is that empirical phenomena… are absolutely real…. However, [this] does not mean that nothing exists. *It does not nullify anything in the world*" (my italics). I interpret this non-nullification as an acknowledgment of appearance as the minimum basis of knowledge. Nagarjuna may have had difficulties developing an appropriate terminology (distinguishing existence, appearance and reality, as I do above), influenced no doubt by his penchant for paradoxical statements seeming to express and confirm Buddhist mystical doctrine.

But if that is what he meant, then he has not succeeded to arrive at a "middle way" (a denial of the Law of the Excluded Middle), but only at a "common way" (a granted common ground). As far as I am concerned, that is not a meager achievement – the philosophical discovery of phenomenology! But for him that would be trivial, if not counterproductive – for what he seeks is to deny ordinary consciousness and its inhibiting rationales, and to thereby leap into a different, higher consciousness capable of reaching transcendental truth or ultimate reality.

It is interesting to note that the Madhyamika school's effective denial of reality to all appearance was not accepted by a later school of Mahayana philosophy, the Yogachara (7th-8th cent. CE). Cheng describes the latter's position

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[4] Adduction treats all conceptual knowledge as hypothetical, to be tested repeatedly – in competition with all conceivable alternative hypotheses – with reference to all available logic and experience.

[5] P. 42.

as follows[6]: "Every object, both mental and non-mental, may be logically or dialectically proven illusory. But in order to be illusory, there must be a certain thought that suffers from illusion. *The very fact of illusion itself proves the existence and reality of a certain consciousness or mind*. To say that everything mental and non-mental is unreal is intellectually suicidal. The reality of something should at least be admitted in order to make sense of talking about illusion" (italics mine). That is the tenor of the phenomenological argument I present above, although my final conclusion is clearly not like Yogachara's, that everything is consciousness or mind (a type of Idealism), but leaves open the possibility of judging and classifying appearances as matter or mind with reference to various considerations.

The Madhyamika rejection of 'dualism' goes so far as to imply that "emptiness" is not to be found in nirvana, the antithesis of samsara (according to the earlier Buddhist viewpoint), but in 'neither samsara nor nirvana'. In truth, similar statements may be found in the Pali Canon, i.e. in the much earlier Theravada schools, so that it is not a distinctly Mahayana construct. The difference is one of emphasis, such statements, relatively rare in the earlier period, are the norm and frequently repeated in the later period. An example may be found in the *Dhammapada*, a sutra dating from the 3rd cent. BCE[7], i.e. four or five hundred years before Nagarjuna. Here, samsara is likened to a stream or this shore of it, and nirvana to the further shore; and we are told to get beyond the two.

> *When you have crossed the stream of Samsara, you will reach Nirvana… He has reached the other shore, then he attains the supreme vision and all his fetters are broken. He for whom there is neither this nor the further shore, nor both….*

Such a formula is legitimate if taken as a warning that *pursuing* nirvana (enlightenment and liberation) is an obstacle to achieving it, just a subtle form of samsara (ignorance and attachment); there is no contradiction in saying that *the thought of* nirvana as a goal of action keeps us in samsara – this is an ordinary causal statement. The formula is also logically acceptable if taken as a reminder that no word or concept – not even 'samsara' or 'nirvana' – can capture or transmit the full meanings intended (i.e. 'not' here should more precisely be stated as 'not quite'). There is also no contradiction in saying that one who has attained nirvana does not need to leave the world of those locked in samsara, but can continue to exist and act in it though distinctively in a way free of attachment.

But it would be a contradiction in terms to speak of 'emptiness' as 'neither samsara nor nirvana', given that nirvana as a concept is originally defined as non-samsara; the truth cannot be a third alternative. At best, one could say that emptiness is a higher level of nirvana (in an enlarged sense), which is not to be confused with the lower level intended by the original term nirvana, nor of course with samsara. In that case, nirvana (in a generic sense of the term, meaning literally non-samsara) includes both a higher species and a lower one; and the statement 'neither samsara nor lower-nirvana' is then compatible with the statement 'higher nirvana'. There is a big difference between rough, poetic, dramatic language, and literal interpretation thereof.

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6 P. 25.

7 London: Penguin, 1973. This is supposedly the date of composition, though the translator, Juan Mascaro, in his Introduction, states "compiled" at that time, thus seeming to imply an earlier composition. It is not clear in that commentary when the sutra is estimated to have been first written down. And if it was much later, say in the period of crystallization of Mahayana thought, say in 100 BCE to 100 CE, the latter may have influenced the monks who did the writing down. See ch. 26 (383-5) for the quotation.

3. Nagarjuna's use of dilemma

As we shall presently see, Nagarjuna often frames his arguments in dilemmatic form. So let me here give you a primer on the formal logic of dilemma. The form he tends to use is what logicians call 'simple constructive dilemma', which looks like this:

If X, then Y – and if not X, then Y
(the major premises, or 'horns' of the dilemma)
but either X or not X
(the minor premise, left un stated if obvious)
therefore, Y
(the conclusion)

where "X" and "not X" refers to some propositions under consideration and "Y" the (explicit or implicit) intermediate and final conclusion. In Nagarjuna, "Y" usually has the negative content "Z is meaningless or impossible or absurd", i.e. it asserts that the propositions concerned ("X" or "not X"), or the concepts they involve, are faulty.

The reasoning process involved is thus the following: the major premises (or 'horns' or 'prongs'), are intended to show that the two theses, "X" and "not X", each leads to some proposition "Y"; the minor premise reminds us that these theses are mutually exclusive and exhaust all available alternatives (it "takes the dilemma by its horns"), and the final conclusion is that only "Y", their common implication, is left over for us. This form of argument is easily *validated,* for instance by contraposing the major premises, to obtain "if not Y, then both X and not X"; since "not Y" implies the paradox "both X and "not X", it follows that its contradictory "Y" is true.

Note that the above dilemma is 'two-pronged', i.e. it considers two alternative theses, "X" and "not X"; it is also possible to – and Nagarjuna does so – engage in dilemmatic argument with three (or more) prongs in the major premise and a triple (or larger) disjunction in the minor premise. These have the form (briefly put)

"**if A or B or C…, then Y;**

but either A or B or C…;

therefore Y"

and can be validated in the same way[1].

Sometimes, Nagarjuna's argument is not properly dilemmatic in form, but only gives the impression that it is so. This occurs when the content of "Y" is merely "Z *cannot be established* as meaningful or as possible or as consistent" – i.e. when it signifies *a doubt rather than a denial*. Dilemma only works (i.e. can only be validated as just shown) if the major premises are proper "if/then" statements, i.e. provided "Y" is some *assertoric* proposition that logically *follows* "X" or "not X". It does not work if "Y" is merely *problematic* given "X" and/or "not X". The form "if X, surely Y" should not be confused with "if X, perhaps Y"; the former means "if X, *then* Y" and the

[1] *Reductio ad absurdum*: denying the conclusion while maintaining the minor premise results in denial of the major premise.

latter means "if X, *not-then not* Y"; the latter is not logically equivalent to the former, but merely a subaltern of it. Similarly, *mutadis mutandis*, in the case of "if not X", of course.

When one or both of the major premises has this less definite form, all we can finally conclude is "*maybe* Y" (i.e. the content "Z *might be* meaningless or impossible or absurd") – which is the same as saying that we reach no final conclusion at all, since "maybe Y" can be said *ab initio* with regard to anything. At best, we might consider "Y" as inductively slightly more confirmed by the argument, i.e. the "maybe" as having incrementally increased in probability; but that does not deductively prove "Y". Dilemma, to repeat, can only be validated if the premises are assertoric; it has no validity if either or both of them are merely problematic. Yet Nagarjuna, as we shall see, sometimes considers such pseudo-dilemma as equivalent to dilemma, and the *non*-conclusion "maybe Y" as equivalent to a *negative* conclusion "Y". That is fallacious reasoning on his part.

As we shall see by and by, Nagarjuna indulges in **many other logical fallacies** in his philosophical discourse. (I have drawn up a list of the nine most striking ones in **Appendix 1**.)

4. The subject-predicate relation

Nagarjuna's assault on reason includes an attempted critique of verbal expression and the structure of language[1]. For him, words are conventions devoid of deductively absolute or inductively contextual meaning or relationships to each other. That he himself engages in criticism by means of language does not bother him, because he grants that it functions somewhat on a practical level, in a "conventional" way, within ordinary consciousness. His goal is as usual to take us beyond words and the illusions he claims they create, into the higher mode of consciousness that puts us in contact with ultimate reality. His means is to demonstrate that language is illogical and futile, putting forward at least two arguments:

(a) He asks, "is the subject identical with or different from the predicate?" His answer is stated by Cheng as follows. "If the subject is the same as the predicate, they would be one and it would make no sense to call one a subject and the other a predicate… the sentence would be a tautology. If on the other hand, the subject is different from the predicate, there would be no particular connection between them." In either case, predication is found redundant.

(b) Furthermore, "what is the status of the subject before predication? Does it already have predicates predicated of it or not?" (i.e. predicates "other" than the subject itself). "If a subject is without any predicate predicated of it, it is incomprehensible and non-existent. If a subject without a predicate is non-existent, to what does our predicate apply? If on the other hand, the subject does have some other predicate predicated of it before we ascribe a predicate, what further function would be served by ascribing an additional predicate since it already has something predicated of it? If it needs this predicate, then a second and a third can in principle be applied. This would lead to infinite regress."

By such arguments, Nagarjuna seeks to give the impression that language is structurally unreliable and a stupid artifice. His arguments are shaped in such a way as to seem logically orderly and exhaustive, i.e. to consider all conceivable alternatives and eliminate them one by one, so that we have no leg left to stand on. He thus apparently uses some of the methodology of logic to convince us. But of course the descriptions of the nature and role of predication underlying his arguments constitute merely one particular view[2], so that his premises are not in fact exhaustive and only serve to show that his proposed view is faulty and to be rejected.

Thus, consider **argument 4(a)**. Its first premise about tautology is obvious and trivial, being itself tautological. More important, the second premise is not at all evident. The subject may well be "different from the predicate" and yet have a "particular connection" to it. There is no logical basis for Nagarjuna's proposed implication; the antecedent concept ("different") and the consequent concept ("unconnected") are quite distinct. If X equals Y in all respects, then 'if X, then Y' and 'if Y, then X' must both be true (though it does not follow that if they are both true, X = Y, since X and Y may well not be simultaneous). X and Y are different, means 'X does not in all respects equal Y', and so implies that X and Y are either non-simultaneous, or that 'if X, then Y' and/or 'if Y, then X' is/are false. Whereas X and Y are unconnected, means that 'if X, then Y' and 'if Y, then X' must both be false, as any lesser such relations between X and Y. Thus, the former concept is wider than the latter, and does not imply it.

The subject-predicate relation under discussion may and usually is posited as, for instance, a classificatory one – a relation between an individual and a class, or a subclass (species) and an overclass (genus), so that the former is included in the latter without being equal in scope to it. 'Does not equal' does not exclude 'is greater than' or 'is smaller than' or 'exists before or after', or any other non-equal relationship. Nagarjuna suggests that if the terms are not identical, they cannot be related by the copula 'is' – but this copula was never intended to mean total

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1 See Cheng, pp. 117-118. He there refers to MT V:1-5, and TGT V:1 and VI:1.

2 A view reminiscent of Kant's and other Western philosophers', incidentally.

equation. Nagarjuna cannot change the convention that 'is' is different from 'equal'; or if he insists on doing so and himself practices what he preaches, we can simply invent another word for what *we* mean by 'is'.

Since Nagarjuna's second premise is unwarranted, his attempted dilemma is dissolved.[3]

Now consider **argument 4(b)**. The first leg mentions a subject "without any predicate" and claims it "incomprehensible and non-existent", so that eventual predication relative to it is senseless. The second leg therefore suggests that a subject can only have one predicate (if any, see earlier), and that ascribing more of them to it implies in each case that the preceding one did not fulfill its intended function (definition?) so that unending predication would be called for – an impossible task. But these arguments are worthless, because Nagarjuna clearly *misrepresents predication*; his view of it is a simplistic caricature.

What do we in fact mean by a subject or a predicate? Primarily, an object of consciousness – an individual concrete or an abstract ultimately known through comparisons of such concretes[4]. This does not imply that we consider all existents as objects of consciousness, but only that as of the moment we think of something (as here) we must admit it as appearance and therefore as existent. Moreover, we need not and do not consider consciousness as invariably correct and all its objects as real – we may well conceive of an illusory object, which has no existence other than in the way of appearance. Secondly, this object (be it real or illusory) may be, and indeed has to be, cognized before we can name it and verbally predicate anything of it.[5] Predication, like its terms, is an object of consciousness before it is put into words. Consciousness of terms and propositions about them may be wordless; words are merely useful concretizations of intended objects of cognition. Also, before terms are brought together in a proposition, the objects intended by the terms have to be known (or believed, verbally or not) *somewhat*; the proposition serves to *add to* that knowledge of the terms, by observing or hypothesizing a certain relation between them.

Nagarjuna tries to suggest the opposite, that we only know things in the framework of predication (and perhaps, of prior verbalization), and that predication merely elucidates or restates knowledge (or belief) already present in the terms. But we may reply that something can well exist without/before being thought of, and be thought of alone without/before being verbalized; and even if/when named, it remains comprehensible without/before being made the subject of any non-verbal or verbal predications; and furthermore that predications are themselves objects of consciousness and that most of them enrich the meanings of both subject and predicate rather than merely redundantly repeating meanings already in them. Nagarjuna also apparently confuses predication with definition, when he considers that a single predication must suffice. In truth, any number of predicates may be ascribed to a subject; predicates are numerous *because* they are not tautologies of the subject; every term is a complex with a potential positive or negative relation to every other term. Even definition has no ambition to tell us everything about something, but merely claims to focus on one set of predicates, which seemingly abide invariably and exclusively with the subject; and a definition may turn out to be erroneous.

In conclusion, Nagarjuna's above arguments prove nothing but the incoherence of the particular view of discourse he presents, and do not succeed in invalidating all discourse. The superficial form of his arguments is usually logical enough. But it is not enough to give logical form to our rhetoric, i.e. that the conclusion follows from the premises – the premises themselves have to be first be found obvious or reasonable. It is the premises of Nagarjuna's arguments that I above contest as naïve and misleading; and my conclusion is merely that his conclusion is not convincingly established.[6] The theory of predication and underlying processes that I rebut his theory with may not answer all questions about these issues, but it is certainly more thought-out and closer to the truth.

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[3] See Appendix 1: fallacies D and A.

[4] By 'concrete' I mean an experienced or perceived object, a phenomenon. By 'abstract', an object of reasoning or conception. A third class of object I do not mention here (so as not to complicate the issues) – objects of self-knowledge or 'intuitions'; suffices in the present context to say that, in relation to abstracts, they have the same position or role as concretes (namely, given data).

[5] See Appendix 1: fallacy G.

[6] See Appendix 1: fallacy D.

To the objection that his use of language to communicate his ideas and arguments implies an assumption (which he denies) that language contains knowledge of some reality, Nagarjuna replies that language is "conventional". This vague accusation of divorce from all reality has little content, so long as it leaves unexplained just how – in convincing detail – such convention functions otherwise (for language evidently does function, as his using it admits). We can also point out that although words are in principle mere conventions, it does not follow that knowledge is "conventional".

First because that proposition, as a factual assertion, claims to know something beyond convention about knowledge; and as regards content, it claims the impossibility of any non-conventional linguistic knowledge (including, presumably, the knowledge the proposition itself imparts); whence, to assert that linguistic knowledge is conventional is self-contradictory. Secondly, all conventions imply factual knowledge: you have to know *that* there is a convention and *what* that convention is supposed to be and *how* to apply it correctly! You cannot have a convention about a convention… *ad infinitum* – it has to stop somewhere factual. Knowledge of conventions is also knowledge; a convention, too, is a reality in itself. It cannot float on an infinity of empty conventions, it has to finally be anchored on some real appearance.

Thirdly, because the conventionality of words is misunderstood. Affixing a label on something, arbitrarily or by agreement, does not imply that the 'something' concerned need not be previously known. We can be aware of things, and even think about them, without words. Words merely help us record rational products; giving us a relatively tangible instrument to manipulate. The value of words is not in making conceptual and logical thought *possible*, but only in making it *easier* (facilitating memory, classification, communication). Convention is therefore a secondary aspect of words; what counts is their meaning. A language composed only of meaningless words, each entirely defined by others, would have to be infinite in size, and would anyway communicate nothing outside itself. If the language is finite, *like ours*, it is bound to be based on some undefined prime words, and thus (since content is only verbal, here) be devoid of content, *incommunicado*. It could not even communicate its own conventions.

Thus, Nagarjuna's dismissal of language as such is an incoherent thesis, which upon closer scrutiny proves inconsistent with itself.

5. Percepts and concepts

According to pre-Mahayana Buddhist (and other Indian) philosophers, the world we experience and think about is composed of "*dharmas*"[1]. This term has various meanings[2], but the one focused on here seems to be equivalent to what we would call a phenomenon, or perhaps more broadly an appearance. A phenomenon is an object of experience; an appearance is an object of cognition of any kind, whether perceptual (phenomena), intuitive (objects of 'self-knowledge') or conceptual (objects of rational knowledge, 'universals'). Dharmas are "momentary, particular and multiple"; they are "not supported by substance or self" yet have their "own or independent nature"; they are "distinct and separate, yet appear and disappear in accordance with the principle of causality". Nagarjuna denies the "reality" and intelligibility of dharmas, using the following main arguments.

(a) He argues, "a momentary entity or impermanent *dharma*" can be "divided into non-enduring or non-abiding" segments, each of which "has, analytically, no duration whatever. It disappears as soon as it appears. Therefore, it cannot be said to have true existence." Yet, it is "supposed to have some duration." Whence, "to say that an entity is impermanent is tantamount to saying that what abides is non-abiding," which is "a contradiction in terms".

(b) Against the contention that "impermanence" does not signify "non-duration", but refers to "the reality of the phenomenal" that each thing "arises, endures for a moment and then ceases to be", Nagarjuna replies: "how [does each of these three] characteristics characterize a *dharma*?" Is it "simultaneously or successively"? It cannot be simultaneously, because "origination, duration and cessation are opposed by nature: at the time of cessation there should not be duration, and at the time of duration there should not be cessation." It cannot be successively, because if the characteristics occur at different times, there would be three different phenomena" and "how can different phenomena be true of the 'same thing'?"

(c) Furthermore, he argues: these three characteristics – origination, duration and cessation – must be either "created" or "non-created". If they are the created, then each of them should in turn "have the three characteristics", each of which in turn, "like other created things," should have them, and so on *ad infinitum*. If, on the other hand, "each characteristic is non-created, how can it characterize a created thing?" In either case, then, we have a "conceptual problem".

(d) Moreover, he argues: "what is the relation between an object and characteristics?"[3]. Are they "identical" or "different"? "If identical, there would be no distinction between them, and it would be absurd to say that the one is object and the other, characteristics." Nor could one say that they are identical in the sense that the object is "the substance of" the characteristics, and the characteristics are "the manifestation of" the object. For to do so would, according to Nagarjuna, imply their relation to be "reflexive", and therefore that "a thing would be subject and object at the same time", which is "clearly impossible, because subject and object are different". If, on the other hand, an object is "different from" its characteristics, "there would be no internal connection between them." Therefore, "characteristics characterize objects" cannot be said.

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1 See Cheng, pp. 76-78, on this topic. He there refers to MT VII:1-2,23,25 and XV:1-2, as well as TGT IV:2, VI:1, VII, VIII:1.

2 See Cheng, p. 128, for a list.

3 It is not clear here whether specifically the three characteristics of arising, enduring and ceasing are meant, or more generally any characteristics. But it does not affect the argument.

(e) He also argues, "whatever can be conceived to exist has a cause. All things are produced by a combination of various causes and conditions[4]. When the conditions change, things will also change and even disappear. *To exist* means to be caused, conditioned, generated or dependent on something. But by definition a *dharma* is an entity which has its own or independent nature." Whence, he concludes, "to say that a dharma exists would be the same as saying that an independent thing is dependent", i.e. the claim "*dharmas* exist" is "a contradiction in terms" and "absurd".

Nagarjuna concluded from these arguments that the concept of dharma upheld by his predecessors, Buddhist or otherwise, was confused and untenable. Reality could not, therefore, be understood through such conceptual tools. But let us now look at his arguments more closely and critically. As we shall see, they are far from conclusive, and generally fallacious.

Argument 5(a) is simply a claim that when a duration of time (moment) is *infinitely divided*, its constituent points of time (instants) have zero duration and, therefore, cannot be said to exist. This argument is already known to Western philosophy through the paradoxes of Zeno of Elea (born c. 490 BCE), and has been amply contested since then by many philosophers, mathematicians and physicists, on various grounds[5]. My own (additional, yet essential) objection to it would be that Nagarjuna here fails to analyze *how and in what order* the concepts he uses arise.

What is under discussion here (viz. the dharmas), are primarily phenomena, empirical givens. In fact, at any one moment of experience, what we perceive is one holistic phenomenon; the 'cutting up' of that total phenomenon into smaller, individual phenomena (different shapes, colors, sounds, etc.) is not in itself perception, but one of the first rational acts. We *experience* things in flux – coming, staying a while, going. To understand such motion, we construct a *concept* of time, which we gradually refine (with measurements, mathematics, Relativity theory). Motion is an experience, but time is a concept. The concept of time *arises in response to* the experience of motion, so it has to be tailored to fit and cannot be used to deny such experience. If a conflict occurs between the two, it is the concept and not the experience that has to be put in doubt and adjusted.[6]

Now, what is the 'infinite division' of a phenomenon that Nagarjuna appeals to? It is not a physical act of slicing a phenomenon with a knife, or anything of the sort. For we have no experience of infinite division in the physical realm; we may subdivide a material body or draw lines on a piece of paper or a computer screen only so far, not *ad infinitum*. Infinite division is an imaginary act. If the phenomenon is of the 'material' kind, the division may occur on a 'mental' image of it; if the phenomenon is already of the mental kind, the division can occur directly on it. But even in our heads, we do not in fact divide infinitely. We may slice the image, then mentally 'zoom in' and slice that slice, then zoom in and slice again a few more times, then we stop.

Now, the zooming in is merely production of a new image – so we are not even, in fact, repeatedly subdividing the same image; we merely *say* 'suppose this image is a detail of the preceding'. The new image has the same size as the preceding, but its *scale* is declared different. Furthermore, the subdivision process takes time, and we do not anyway have an infinity of time – so we have to stop it after a few sample shots, and then *say* 'suppose I repeat this to infinity'. Thus, infinite division is not even a real act in the mental field, but a mere verbal statement – i.e. at best, *a concept* referring to the intention to 'cut' and memory of recurrent events, projected to a hazy 'infinity'.

Furthermore, when we imagine division of a (two-dimensional) phenomenon, we imagine (one dimensional) line drawn somewhere in the middle of it. But how is the geometrical entity known as a line (length devoid of width) first conceived? It is derived from experience of the visible *boundaries* of phenomena (with length and width) in relation to their surrounds; there has to be some difference between the two sides of a boundary for it to be visible. A line in the middle of an extended phenomenon is thus partly a concept, and not a pure percept. We never

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[4] In Buddhist philosophy, causes are relatively internal or direct, conditions are relatively external or indirect. But the word 'cause' may also be taken more broadly, to include such causes and conditions indiscriminately. See *Lotus in a Stream*, by Hsing Yun (New York: Weatherhill, 2000), for more details (pp. 80-82).

[5] See Ralph E. Kenyon Jr, ***Atomism and Infinite Divisibility***, a doctoral dissertation presented to the University of Massachusetts, Amherst, 1994. The full text is available on the Internet at http://www.xenodochy.org/rekphd/.

[6] See Appendix 1: fallacy G.

entirely see a line, we always have to some extent think it. We have to effectively accompany it with the thought 'this line has no width'. Thus, the visualization of division does not in itself prove infinite divisibility.

Nagarjuna, for all his supposed meditative introspection, has clearly not paid attention to how his concept of 'infinite division' arose in detail.[7] His argument or 'thought experiment' is without substance, because he has in fact certainly not engaged in 'infinite division'. He has not shown experientially that dharmas of zero extension in time are the building blocks of dharmas with duration in time. He has therefore not demonstrated that a contradiction exists in the concept of momentary dharma.

Let us now move on to **argument 5(b).** It is true of all phenomena that they are momentary. It does not follow that all existents are momentary, but that need not concern us here. Nagarjuna's predecessors or opponents are quite correct in their analysis of the momentary as something that appears, endures awhile then disappears. Nagarjuna is correct in saying that these three characteristics are opposed, i.e. cannot occur simultaneously. But his definition of simultaneity as "at the time of" is vague and misleading. His definition of succession as occurrence "at different times" is also incorrect. Both premises of his dilemma are therefore confused, as we shall now see.

For the arising and the ceasing are conceived as *at the temporal boundaries* of the duration, and so not as *in* it nor quite as *outside* it. Arising occurs at the instant (the unextended point of time) the duration starts, and ceasing occurs at the instant the duration ends. The concept of arising refers to just that instant of flip-over from absence to presence, and the concept of ceasing to just that instant of passing from presence to absence. The coming, staying and going are successive, in the sense that the arising and the ceasing are not simultaneous with each other. But each of the latter is instantaneous and contiguous (and in that sense only, simultaneous) with the duration (at either end of it). They cannot therefore be said to be 'at different times' from it. The arising cannot be said to be 'before' the duration and the ceasing cannot be said to be 'after' the duration; they are not time-consuming processes (though such processes may precede and cause them). The two limits of duration (be it brief or long) cannot actually be dissociated from it. The phenomenon remains one, even as we conceptually distinguish three 'characteristics' of it.

We thus see that Nagarjuna's argument is based on a stupid or deliberate fuzziness of definition.[8] The confusions involved in his dilemma are entirely of his own fabrication; he sows them to have pretexts for criticism. He uses 'at the same time' to mean 'in overlapping durations' and 'at different times' to mean 'in separate durations', whereas what is under discussion is instants which are the edges of a duration. No wonder then that he concludes that there is either contradiction or separation.

Now study **argument 5(c)**. Two arguments are intermingled in it – one relates to the hierarchy of concepts and percepts[9], the other relates to causation.

Nagarjuna claims that the three stages (arising, staying, ceasing) of each phenomenon may be viewed as in turn a phenomenon. What he relies on here is a reification of the first and last stages; he tacitly implies that because they have separate names they too have durations. The distinctions between the three are thus erased. If we consider the conceptual development involved, we see that, in a first phase, 'phenomenon' refers to a unit of *perception* (a piece of the perceptual field isolated by mental projection, to be exact); in a second phase, we distinguish within this event or thing an instantaneous beginning, a momentary middle and an instantaneous end, and accordingly form *concepts* of arising, enduring and ceasing. The latter are abstract aspects of the concrete phenomenon, and therefore in a sense 'present in' it and 'part of' it.

But contrary to what Nagarjuna suggests, it does not follow that arising and ceasing *in turn* have a beginning, a middle and an end – since they are instantaneous. It does not even follow that the middle part of the initial phenomenon has *another* beginning, middle and end – since we have already abstracted the two ends of the phenomenon away from its middle. We thus have no basis for an infinite regression of concepts; we remain only justified in having one concrete phenomenon and only three abstract aspects of it. The "characteristics" are phenomenal in the sense of being distinguishable in a phenomenon; but not being themselves 'divisible' in the

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7 See Appendix 1: fallacy E.

8 See Appendix 1: fallacy F.

9 See Appendix 1: fallacy G.

same way as it, they cannot rightly be called phenomenal in the same sense as it. One cannot say that arising both arises and ceases at once, or say the same about ceasing; because neither of them has duration; that which arises has to be absent *for a while* then present *for a while*, and similarly in the opposite direction with ceasing.

Furthermore, whatever produces the primary phenomenon *also* produces the three aspects of it we have distinguished in it; they do not require *additional* causes that will *separately* produce them. Even if we regard, as did Nagarjuna's philosophical forerunners, everything in the phenomenal as having been "created" (in the sense at least of being produced by preceding causes and conditions), perhaps in an infinite chain, it does not mean that such causality forks out repeatedly and endlessly.

The "thing" caused, with all its characteristics, is one. Ordinarily, the cause causes arrival, a minimum stay, and if the event is momentary thereafter a departure. We may in some cases identify something as causing the arrival of that thing; a second as causing its staying on; and a third as causing its departure. But even then the cause of the arrival is also partially a cause of the staying on and of the departure, since without arriving a momentary event would not be able to stay or depart. Also, the cause of the staying on is a partial cause – in a negative sense of a hindrance – of the eventual departure. In such cases, however, 'the cause' of the phenomenon as a whole would simply be *composed of* a series of three subsidiary 'causes' – one determining the arising and a minimum momentary stay, the next prolonging the duration after arrival and preventing ceasing, and the last interrupting duration and determining ceasing. This is merely an analysis of causation and not a multiplication of causes *ad infinitum*.

Thus, we have replied to Nagarjuna that the thing characterized is not apart from its three characteristics, and they do not in turn each have three characteristics. Also, the respective causes of the three characteristics together sum up to the cause of what they characterize, and its cause is not apart from their causes. Nagarjuna gives the impression of making logical analyses, but in fact he glosses over details and nuances at his personal convenience.[10] His arguments give an appearance of structure and order, but beneath them lies a great carelessness in observation.

Now study **argument 5(d)**. Are an object and its characteristics "identical" or "different"? An individual object could be regarded as the sum total of all characteristics, permanent and transient, observable in it. More precisely, if (or so long as) one or several, or one or several combination(s), of these characteristics is observed in the object and never in any other, we may consider every such single or collective characteristic as a sign of the object, i.e. as signifying its individuality or essence. The single or collective characteristic(s) exclusive to an object could thus be regarded as "identical" with it for all intents and purposes, without however wholly equating it/them to the object. For the object as a whole should be taken to include its non-distinctive attributes or actions, as well as its distinctive essences.

So the answer to Nagarjuna's question is as follows. His terminology is as usual lacking in nuances[11]; for this reason, the choices he gives us seem restrictive and force us into dead ends. We have to first distinguish essential (distinctive) characteristics (or sets of them) from common (non-exclusive) ones. The individual object is the totality of its facets and history, including both these types of characteristics. The essential characteristics could be considered as the "substance" of the object; the non-essential ones, as its "manifestation". This would avoid any implication of "reflexive" relation. Thus, we can regard some characteristics as "identical" with the object (without however meaning equal to it); and others as "different" from it (which does not imply them disconnected from it). And we can well say that "characteristics characterize objects", while remaining aware that the subject and verb of this proposition are of variable meaning.

Of course, none of this tells us what the "relation" between an object and its characteristics precisely is, i.e. in what sense the later 'belong' to the former. We have above just accepted that there are relations, which we can in practice identify by observation and distinguish between statistically. To better understand the relational aspect, we need to develop a theory of 'universals' – what are these things and how do we know them? What we perceive are concrete objects; the 'universals' are abstractions from these phenomena.

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[10] See Appendix 1: fallacy E.

[11] See Appendix 1: fallacy E.

Abstraction is performed by comparisons and contrasts between present phenomena and/or presumed memories of past phenomena. Abstracts are apparent as the various measures or degrees in the wave motions that constitute phenomena. Phenomena of light, sound, etc. have various intensities, frequencies, etc. These quantitative or mathematical variations are inherent in the phenomena of perception; some are measured roughly and 'instinctively', others, through conscious experiment and careful calculation. In either case, rational work is required to distinguish them out from their perceptual context, and from each other; and to name, interrelate and classify them; and to keep our theses concerning them logically consistent. For this reason, we regard them as objects of another level of cognition, the conceptual, and say that abstracts are known by conception.

In the Buddhist tradition preceding Nagarjuna, "dharmas" are already said to be "empty". This can be rationally understood to mean, not that objects are devoid of essential characteristics (in the sense above defined), but that there is nothing non-phenomenal (or noumenal) to consider behind the phenomenal. I would agree with this proposition, and submit that when other Buddhist philosophers combat the idea of "essences", they are not denying that abstract characteristics are distinguishable within phenomena and that some of those are distinctive, but are denying a particular philosophical development, namely the notion that "an object" is *more than* (or even *other than*) its evident phenomenal aspects and the inductively justifiable abstractions therefrom (which, to repeat, are merely measurements). The doctrine of "emptiness" initially opposed such fanciful reification as sidetracking our attention, and recommended we remain focused on what is in fact apparent to us. Knowledge is knowledge of actual phenomena, not of some imagined 'reality' behind them.

> A lot of the confusion in this issue is due to failure to make two distinctions. If we perceptually knew all the phenomena *ever existing* in the universe, we obviously could not logically claim that there might be any *further* phenomenon hidden behind them. But because we conceptually know (having memory of our changing scope of knowledge, and in any case the uncertainty at all times that we have perceived everything) that we have access to *only some* of the phenomena in the universe, we can legitimately suppose that there might be *yet unknown* phenomena to consider, and that these might in yet unknown ways affect known phenomena. Furthermore, even if the totality of existents appeared to us, i.e. even if we experienced everything that ever is, was or will be, on a concrete level, we could still additionally abstract their similarities and differences, and their statistical regularities and irregularities, and point to such *abstract* aspects as underlying substrata or causes.
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> Thus, two distinctions are called for. The first is a distinction between a theoretical perceptual omniscience, from which viewpoint *by definition* no hidden phenomena are conceivable, and a practical relativity of knowledge to limited perceptual context, which viewpoint *allows for supposition* of unknown but subterraneously operative phenomena. In the former case, 'existent' and 'apparent' are co-extensive, but in the latter case 'existent' is a genus of 'apparent'. Secondly, neither of these absolute and relative positions excludes a category of being and knowing other than the perceptual, viz. the conceptual, from being appealed to. In both cases, abstracts can still be posited as 'underlying' concretes. Here, the concept of 'apparent' is enlarged to include not only concretes (phenomena) but also abstracts (universals).
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> On this basis, we can ask what Buddhism means when it says that "dharmas" are "empty". Does it mean that phenomena have no other *phenomena* behind them? This may be affirmed by a proven omniscient Subject, but the rest of us have to always concede that there are probably phenomena hidden to us (as we often discover later), which may impinge on those known to us. Does it, alternatively, mean that concrete appearances (phenomena) have no *abstract* appearances behind them? This cannot logically be claimed without self-contradiction, since such a claim is itself manifestly abstract; the fact of the claim must itself be taken into consideration. One may legitimately argue, discursively, about the objectivity or subjectivity of the abstract, but not about its ultimate validity in some way. Also, whether the abstract is present in the object or in the subject, it still *abides* – at least in the sense that there is no time duration when it is absent from existence.

Nagarjuna's doctrine of "emptiness" includes not only the previous denial of a noumenal world, but equally denial of the phenomenal world.[12] It is an attempted one-upmanship on his predecessors. They were anti-rationalist, in

[12] See Appendix 1: fallacy G.

the sense of rejecting a certain excess of rationalism, a sickness or error of rational projection that ignores, obscures or eclipses experience. He typically takes a more radical and extreme posture and rejects *all* rationalism indiscriminately. But this is really a rejection of experience, a claim that ultimate reality is beyond it – i.e. it is in effect another form of noumenalism, a return to the sickness his predecessors combated. He pretends that his conclusion can be reached by logical means; but his means are evidently not logical.

Finally, consider **argument 5(e)**. Nagarjuna takes as one of his premises that all conceivable existents have causes of some sort. But that is debatable.[13] We might accept a statement that all phenomena (i.e. perceived existents, concretes) have causes – though even that is debatable. For such a general statement can only at best be known inductively, by hypothetical generalization from cases where causality has specifically been established; strictly speaking, it is also conceivable that some phenomena (or perhaps some unperceived concrete existents) are eternal or spontaneous or free (i.e. uncaused in some sense). But what of conceived existents (abstracts) – do they also, as he claims, all have causes? That is even more debatable. When we speak of a kind of thing causing another kind of thing, we more precisely mean that instances of the former cause instances of the latter. As for large abstractions, like God or the universe as a whole, or even just existence, we can conceive them as existing without cause.

As a second premise Nagarjuna takes the idea of his philosophical predecessors or opponents that a "dharma" has "its own or independent nature" as meaning that it is independent of causes. But this is not their intended meaning, which is only that dharmas are "distinct and separate", i.e. each have a specific nature of their own. This is evident in their explicit position that, as we have seen, dharmas "appear and disappear in accordance with the principle of causality". So Nagarjuna is playing on the equivocation of the term "independent". He does so to load the dice in favor of his desired conclusion, making it seem as if they made self-contradictory claims about dharmas.[14]

Nagarjuna thus has not disproved the statement that dharmas exist. And in fact such a statement has no need of rational proof, if it is understood to mean that phenomena exist, for that is empirically evident. We know for sure of the existence of "existence" only through the experience of phenomena.[15] The concept of existence is based on that of phenomena, enlarging the latter to include hypothetical unperceived concretes, and at a later stage hypothetical abstracts and hypothetical objects of intuition (self-knowledge).

What, anyway, do we mean by the "nature" of a thing? My understanding of the term refers to the 'laws' of behavior of the thing, signifying that things exhibit certain regularities of behavior (being or doing). For instances, something may have character X or do X *always* (while in existence), or *only when* Y occurs. Apparently, in our universe, things cannot be or do just anything we imagine for them. Maybe, if everything is just energy, they ultimately can; but the world as we observe it so far seems to contain things with limited behavior possibilities. We acknowledge this apparent fact by saying that existents have a 'nature'. We do not thereby imply them independent of causes, as Nagarjuna suggests, but on the contrary say that if things have causes, they have a nature. Moreover, even something without causes may have a nature, if it has limited behavior patterns. Only something not subject to 'law' at all has no 'nature'.

Phenomena may yet be ultimately not subject to 'law', i.e. devoid of 'nature'. But to support that thesis, Nagarjuna ought rather to have emphasized, like his predecessors, the positivistic idea that phenomena exist in succession, each moment caused by a previous and causing the next, without an underlying continuity between them across time. This concept remains conceivable, if we gloss over our observations of regularity, arguing that regularity is only known by generalization. But generalization is justified as follows[16]. We observe certain things that are X to always be Y; we infer that all X are Y, because we refuse to assume that there are Xs that are *not* Y until we have observed such negative cases. On the other hand, to refuse to generalize would be to admit such imagined changes in polarity without empirical basis.

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13 See Appendix 1: fallacy D.

14 See Appendix 1: fallacy F.

15 See Appendix 1: fallacy G.

16 See my *Future Logic*, ch. 50 and 54-55.

Thus, generalization (duly controlled by particularization, when new observations belie it) is a *more empirical* rational act than non-generalization; it makes less assumptions. I have observed some Xs that are Y, and maintain that all are since some are; but I have not observed any Xs that are not Y, so how can I presume the latter possible without specific additional reasons? The notion that *anything might become anything* is thus a very hard thesis to prove – one would have to *observe* everything eventually turning into everything else, one could not appeal to any generalization whatsoever. One would also have to explain why different things were transformed in different sequences. One would therefore have to be omniscient to prove such a thesis. Or one would have to find some convincing indirect theoretical reason to believe it, such as experimental and mathematical evidence that all energies are convertible into all others (a unified field theory), which neither Nagarjuna nor anyone has succeeded in doing yet.

To summarize, all five arguments proposed by Nagarjuna in relation to the concept of dharmas are faulty (the three middle arguments being inconclusive dilemmas[17], the other two not self-contradictory), and indeed probably intentionally so. It is not the concepts he attacks that are absurd or contradictory, it is his own discourse that merits such condemnation. It may seem incredible that so many people for so many centuries have studied his work without crying 'foul!' – but, what can I say, that is the way of the human psyche. It can allow itself to be intimidated by someone's prestige and submit unthinkingly to authority, or to gloss over incredulity in response to a promise of salvation dangled appetizingly before it.

[17] See Appendix 1: fallacy B.

6. Motion and rest

Nagarjuna denies the knowability and possibility of motion and likewise of rest, and purports to refute them by various arguments[1], thus (by negation) proving the truth of the "emptiness" doctrine. He does this by means of outwardly logical argument forms, like (two- or three-pronged) dilemmas or showing some propositions to be self-contradictory or circular. But in all cases, it is evident that some of the premises he appeals to are arbitrary and designed to sow confusion so as to yield his foregone conclusions. I shall first present his arguments, then their rebuttal.

a) **According to Cheng, Nagarjuna divides the "path of motion" into three segments, the "already passed", the "yet-to-be passed" and the "being passed", and argues that if we examine each of these, we cannot find "the act of passing" in it, concluding that "motion is impossible and cannot be established". The act of passing is not to be found in the already passed, "because it has already been passed"; nor in the yet-to-be passed, "because it is not yet"; nor in the being passed, "because if we are still examining whether there is the act of passing, how can we use the 'the path which is being passed' to establish the act of passing?"**
b) **Similarly, Nagarjuna contends that motion cannot even "begin", in any of these three segments. Not in the already passed, because is it is "the effect of" the beginning to pass, which "is over". Nor in the beginning to pass, because it is "the starting point of change" (i.e. it precedes the yet-to-be passed), which "has no change yet". Nor in the being passed, which "is possible only if there is an act of passing," which in turn "is possible only if there is a beginning of passing". Additionally, "since motion cannot even be started, how can we talk about a place to go?"**
c) **Similarly, it is claimed that "the mover or moving entity cannot be established" and that "the mover cannot move". For "if someone moves… we cannot say that 'the one who has already moved' moves because his action is over"; and "we cannot say that 'the one who has not yet moved' moves because that involves a contradiction". Finally, we cannot say "the mover means 'the one who is moving'", since "there can be a mover only when there is an act of moving, yet whether there is an act of moving is the issue we are examining" and so we would be "begging the question".**
d) **It is also claimed doubly fallacious to say "the mover moves", because we would be asserting that "the mover can be separated from the act of motion" and that "there are two kinds of motion, namely, motion in the mover and motion in the act of moving". Here, Nagarjuna questions the very relation between mover and motion. Are the two "identical or different"? If the former, then "the mover would always be moving". If the latter, then "the mover can exist without motion, and vice versa". Both these assumptions are "absurd", so "neither motion nor mover could be established".**
e) **Lastly, we might be tempted to conclude, from the preceding arguments against motion, that everything is at rest; but Nagarjuna preempts this way out, by arguing that even "rest cannot be established" as follows. That which rests is either a "mover (or moving thing)" or a "non-mover (or non-moving thing)". But "it is absurd to say that the mover rests, because this involves contradiction"; nor can it be said that "the mover rests when he stops moving", because "when someone stops moving, he is not the mover anymore". It is also impossible to say that "the non-mover rests… because rest means cessation of motion," and since "the non-mover does not move" he "cannot cease to move (rest)". Since these are the only two alternatives, "rest is impossible".**

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[1] See Cheng, pp. 78-83, on this topic. He there refers to MT II:1-21. Nagarjuna's claim that motion is impossible is comparable to that of Zeno the Eleatic, but the latter does not deny rest like the former; furthermore, their arguments are very different.

f) Another argument with the same conclusion: rest "must happen at some place or at some time". It cannot happen "at that which is already passed (or the past), or at that which is yet to be passed (or the future), or at that which is being passed (or the present)", because "as pointed out previously, there cannot be motion in any one of these situations, hence there cannot be the cessation of motion, or rest." Cheng goes on to explain: "For Nagarjuna, motion and rest are relative to each other", and he concludes "hence both are devoid of specific character or nature, and neither is real."

Thus Nagarjuna apparently shows that "one cannot hold that what is real is permanent or impermanent". It would follow that the beliefs relating to motion and rest, generated by ordinary consciousness and by its logic, are illusory and invalid; whence, we ought to instead adhere to that other, superior way of knowledge defended by Nagarjuna – awareness of the void. All this is of course nonsense, as I shall now demonstrate.

Let us start with **argument 6(a).** At first sight, it may be construed as an attempt to say, as the Greek philosopher Heraclitus did, that you cannot step into the same river twice – or indeed once, since as you are stepping into it, its waters have already moved on. But the intent of such a statement is merely to say that everything is always in motion. This is indeed one of the tenets of traditional Buddhism ("impermanence", *anitya*), but not Nagarjuna's intent here, which is a denial of motion as such.

His argument states that *actual motion* ("the act of passing") has to take place in past, future or present. Being by definition present, actual motion admittedly cannot take place in the past or future, as the first two premises imply. But that does not mean that when the past was present, motion was not actual in it; nor that when the future becomes present, motion will not be actual in it. *The label "actual" is not static, but refers dynamically to every instance of "the present"*; as the present changes position on the time-line, so does the reference point of actuality. As for the third premise, it is misleading, for we can well (and indeed must) say that actual motion exists in the present.[2] Nagarjuna suggests that we have to prove ("examine" and "establish") that actuality is in the present before we can affirm it. But even if this were granted, the inferred third premise would be problematic, and not the assertion that actuality is *not* in the present; in which case, the dilemma as a whole would remain inconclusive, and not result in *denial* that motion is possible and knowable.[3]

However, furthermore, we *can* prove that motion is actual in the present. We can refer to the *appearance* of actual motion in the present, and claim it as 'empirical evidence'. Such experience is logically sufficient to *prove* the point at issue, even if only taken phenomenologically, as mere appearance, irrespective of the status of 'reality' or 'illusion' ultimately granted to particular motions, and irrespective of the issue as to whether what is perceived (the phenomenal) is material or mental or whatever. Additionally, we have to ask how the concepts of actuality, motion and present *arise* in the first place. They arise in relation to such experiences, and therefore cannot be required to be thereafter "proved" *by unstated means and standards* to be related to them.[4] There is no inconsistency or circularity in our position; it is Nagarjuna's position that deserves such criticism.

Next, consider **argument 6(b)**. Without a doubt, *when* motion begins, it must begin in past, future or present. But incidentally, a fourth possibility exists, which Nagarjuna does not mention – that of a motion *without* beginning; so we should say when *and if* motion begins. Even so, here all three horns of his dilemma are incorrect.[5]

Motion may well begin in the past – even if later motion, in the more recent past, is a consequence of such earlier (beginning) motion; there is nothing illogical in this scenario, and Nagarjuna's rejection of it is arbitrary.[6] Motion may also well begin in the future – it has indeed not yet begun, but when and if it does, it will take place in the segment of the time-line we now call the future; this too is obvious and quite consistent. Nagarjuna seems to have trouble understanding the tenses of verbs, freezing some verbs (e.g. begin) in the present tense while mixing them with others in the past or future tenses.[7] Lastly, motion, when (and if) it begins, begins in the present; "beginning of passing", "act of passing" and "being passed" are one and the same in the present instant (point of time),

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2 See Appendix 1: fallacy H.
3 See Appendix 1: fallacy B.
4 See Appendix 1: fallacy G.
5 See Appendix 1: fallacy B.
6 See Appendix 1: fallacy D.
7 See Appendix 1: fallacy H.

though as the present stretches into a moment (duration) the concepts may diverge. Nagarjuna uses that ambiguity to suggest a conceptual conflict, but there is none.[8] Incidentally, similar arguments could have been formulated with regard to "ending of motion", and similarly rebutted.

Let us now inspect **argument 6(c)**. Here again, Nagarjuna tries to confuse us with mixtures of tenses, in his first two premises.[9] We indeed cannot say that one who has already moved *now* moves, but we can say that he did *then* move; his action is now over, but was not over then. Nor indeed can we say that one who has not-yet moved is *currently* moving, but we can say without contradiction that he may well *later* move. As for the third premise, it is true that we cannot speak of a mover (or moving thing)[10] without referring to a movement, but it is not true that whether there is a movement is an issue under examination. As indicated earlier, the present motion under discussion is an empirical given, not requiring *further* proof of whatever kind. The concept of it arises only in relation to such experiences (current, or at least remembered), and all discussion about it is subsequent; without such experience, the word 'motion' would be meaningless to all of us, including Nagarjuna, and there would be nothing to discuss.[11]

Whether or not motion necessitates an *underlying entity* (a mover or moving thing) is, however, an issue – we can legitimately ask the question. The assumption of a substratum to (empirical) motion is a more complex, conceptual act, subject to the usual checks and balances of inductive and deductive logic. On a naïve, pre-philosophical level, we would argue that we never experience instances of disembodied motion, but always things *in* motion. But further reflection puts this impression in doubt, for we cannot *empirically* equate a body experienced at one time to a body experienced at another time. Such equation is very conceptual, requiring a *hypothesis* of continuity. We may claim that hypothesis as inductively true, if it is consistent and repeatedly confirmed, and providing no counter-hypothesis of equal or better coherence and credibility is found, but we cannot claim it as a purely empirical or deductive truth.

"Whether there is an act of moving" is not an issue; the issue is whether there is an abiding "mover or moving thing" beneath that "act of moving", or whether that "act of moving" is a mere event of successive experiences flashing forth. My own answer would be that even if there are no *individual* entities behind successive appearances, we can at least point to *existence* as such as a substance, or *the universe* as a whole as an entity, and regard that as necessarily abiding in the midst of its successive, changing appearances. If this argument establishes a collective substratum, then individual substrata become more easily acceptable.

Moreover, the concept of a substratum is not an arbitrary invention, but designed to register and explain the enduring similarities between successive appearances despite the dissimilarities we label as changes. We say that change has occurred because we notice that two appearances are *in some respects* different; we can also say that something has endured because we notice that the two appearances are *in other respects* the same. Without the hypothesis of some constant underlying change, we would have to regard the remaining similarities between the two appearances as mere coincidence. But it seems improbable to us that such repetition would be just happenstance; explanation seems called for. It is to calm our surprise at such recurring coincidences that we posit a substratum or substrata.[12]

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[8] See Appendix 1: fallacy F.

[9] See Appendix 1: fallacy H.

[10] The terms 'mover' or 'moving thing' are clearly not intended here to have causal connotations, i.e. to tell us who or what is causing the movement or being caused to move. That is not the issue under discussion, note well. The terms are meant neutrally, to refer to the underlying entity undergoing movement.

[11] See Appendix 1: fallacy G.

[12] To give an example. A bird stays awhile in my field of vision. Many of its features are constant (e.g. the shape of its head); some vary (e.g. its wings may be folded or spread out). If the bird appearance changed suddenly into the appearance of a rabbit, then a tree, then a car, then an elephant – I might well be tempted to consider appearances as without substratum. But because this does not happen, at least not within the brief and narrow scope of my experience of life, I opt for the thesis that there is an underlying entity (that I call a concrete "bird"). At a later stage, seeing many similar entities, having in common various anatomical and biological characteristics (such as wings, etc.), which distinguish them from other entities (e.g. winged insects), I additionally formulate an abstract class of "birds".

As already explained in the previous chapter, this underlying constancy may in some cases be identified as something concrete (i.e. a phenomenon to be sought and found), whereas in other cases it remains merely abstract (i.e. just an appearance of sameness in some respect). The constancy may most appropriately be labeled a substance or entity if it is phenomenal. But even in cases where no phenomenal substratum can be pointed to or found, but only the repetition over time of an abstract characteristic, we may think of the latter as a substratum of sorts, for abstract existence is also a category of being. This is especially true if abstracts are regarded as objective; but it is also true if they are considered subjective, for in such case the continuity of something within the Subject has to be admitted.

Thus, Nagarjuna's third premise is wrong in some respects and right in others. *Ab initio*, he is wrong in doubting motion and alleging a circularity, but right in effectively doubting a mover or moving thing. The former is not inferred from the latter, but vice versa. The former is empirical and requires no proof, the latter is hypothetical and requires proof. But reason is able to propose proof. The proof proposed by it is, however, inductive, not deductive. The room for doubt that inductive (as against deductive) proof leaves over, opens a window of opportunity for the thesis of "emptiness"; but that is not thanks to Nagarjuna's wobbly reasoning.[13] His Buddhist goal is still possible (perhaps through meditation), but not his discursive means.

Now for **argument 6(d)**. Let us first focus on Nagarjuna's claim that if mover and motion were "identical" then "the mover would always be moving". He ignores that we may well call that which is moving a mover *during the duration* of his motion, without implying that this label remains applicable before or after the motion.[14] Furthermore, that motion and mover are precisely co-extensive in time does not imply that they are "identical"; if that was our belief, we would not use distinct words for them (or we would consider them synonymous) – our intention in doing so is to refer to distinct aspects of the whole event, the perceived change of place and the conceived substratum of such change.

Likewise, his claim that if mover and motion are "different" they could exist separately is gratuitous. Two aspects of a single event may be distinguished intellectually without signifying that they ever appear separately on a concrete level. "Motion" and "mover" are two types of concept, formed relative to the same percepts. "Motion" as a concept refers to the abstract common character of all concrete motions, known by comparisons between them and contrasts to other things (such as restful events). "Mover" is another sort of concept, referring to a hypothetical explanation of the existence of constancies as well as variations observed in the course of motions, as above explained. Both refer back to the same collection of concretes, yet each concentrates on an abstract level on a different aspect of what was perceived.

Furthermore, when Nagarjuna suggests that to say "the mover moves" implies belief that the mover can be *concretely* "separated" from the motion, and that there are "two kinds of motion" (one "in" the mover and the other "in" the moving), he is not showing commonplace theses to be fallacious, but merely attacking red-herring theses of his own interpolation. He takes advantage of the equivocation in the word separation, to confuse mental and physical, or more precisely intellectual (abstract) and phenomenal (concrete), separation. And he artificially adds a new and redundant third concept to those of motion and mover, referring to motion "in" each of them – although we never ordinarily regard motion as *itself* moving[15] or a mover as having a motion *besides* the motion by virtue of which he is labeled a mover.

Thus, both horns of Nagarjuna's dilemma are based on mere equivocations, and therefore unfounded.[16]

Finally, let us examine **argument 6(e)**. Here again, Nagarjuna is playing on words. Certainly, as his first premise remarks, we cannot without self-contradiction say that "the mover rests" – but we can consistently say that that which was *previously* moving is *now* resting. The label "mover" is not forever fixed once applied to something, but applicable only so long as that thing is considered in motion; thereafter, a new label must be applied to it, that of "thing at rest". Nagarjuna himself admits this in the next breath, when he argues "when someone stops moving, he is not the mover anymore". He adduces this to deny that "the mover rests when he stops moving", and then

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13 See Appendix 1: fallacy B.

14 See Appendix 1: fallacy H.

15 This is not to be confused with the concept of acceleration, i.e. change of velocity.

16 See Appendix 1: fallacies F and B.

goes on to define rest as "cessation of motion", again contradicting himself. But anyway, "rest" does not exactly mean *cessation* of motion, it refers more broadly to *absence* of motion. Cessation is a special case of absence, and not co-extensive with it; something may be at rest *without precedent* motion as well as after motion.

In his second premise, aiming to deny that the "non-mover rests", he conversely implies that the "non-mover" was not previously moving and so could not have ceased to move and so cannot be at rest. But we can reply without self-contradiction that something may well be a non-mover at present, and yet have been a mover in the past (who ceased to move); or that anyway he may be at rest now without having in the past moved and then stopped moving. Our concept of time is built precisely to deal with such issues. The label non-moving is not inalienable, but tied to actual situations of rest and inappropriate in all other situations; moreover, the concepts and labels of "non-moving" and "rest" are intended as identical (mere synonyms, and antonyms of "moving" and non-rest").

All these comments are of course obvious to everyone, but have to be made here to show point-by-point the tragicomedy of Nagarjuna's word-games. Both premises of Nagarjuna's dilemma are dissolved, being based on unfair fixation of terms.[17]

With regard to **argument 6(f)**. Nagarjuna here recalls his earlier arguments against motion, and infers from their alleged conclusion that motion is impossible, that cessation of motion, and therefore rest, are likewise impossible. We can answer: indeed, if there was no motion, there would be no cessation of motion; but since motion was not successfully disproved, it cannot be inferred that cessation of motion has also been disproved. Furthermore, even if motion and cessation of motion were disproved, it would not follow that rest is impossible or unknowable, for rest is a genus of both "cessation of motion" *and* "never in motion", and to deny one species does not necessitate denial of the other (or else denial of anything would imply denial of everything).[18] In short, if there was no motion in the world, it would just follow that everything is at rest – the universe would simply be static[19].

Thus, Nagarjuna's cunning attempt to deny rest as well as motion, and thereby to invalidate "dualistic" reason and impose a "non-dualistic" consciousness, is easily disabled. Both motion and rest remain conceivable and consistent theses; his "logic" is fake throughout. Nevertheless, we must address his last assumption, that (as Cheng puts it) "motion and rest are relative to each other". Let us here generously ignore his specification of rest as cessation of motion, and consider the term properly to mean non-motion, because the issue is important and moot. I have stated that motion has to be accepted as undeniable empirical evidence, because *even if an apparent motion is judged illusory and not real, it remains classifiable as motion.*

> We cannot explain-away (perceived) physical motion by supposing that it might be a figment of imagination, for we would still have to admit or explain-away the imaginary motion that we have by our very supposition posited as existing. "Imaginary motion" signifies a movement of projected mental entities – that *too* is a perceived, concrete event (differing from "physical" motion only in respect of presumed underlying location, substance and possible genesis – occurring "in the head", made of some "mental" stuff, and perhaps "generated by the perceiver"). We might try to explain imaginary motion away too, by claiming that both physical and mental motion are "verbal constructs", i.e. that motion is a word without reference to a concrete experience of any kind, but defined by putting together previous words. But this would just mean that we regard motion as abstract, conceived – whereas, we clearly *concretely perceive* motions. The *experience* of motion has to be admitted, we cannot ignore it. Whether this experience is imaginary or physical is another (conceptual) issue, which does not affect it.[20]

Now, the question arises, is *rest* equally evident? *Prima facie*, my answer would be: yes. Our experiences include not only appearances of motion but also appearances of rest. Whether perceived rest is at a conceptual level real or illusory is irrelevant; that it is perceived suffices to qualify it as empirical evidence. Here again, to claim that the concept of rest is based on a mental projection on dynamic physical phenomena, does not invalidate the concept, for we are still left within that thesis with the experience of static mental phenomena. Unfortunately, when we formulate theories of motion, in a bid to understand it, two broad hypotheses emerge:

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17 See Appendix 1: fallacies H and B.

18 See Appendix 1: fallacy C.

19 A vision seemingly adopted by Parmenides, incidentally.

20 See Appendix 1: fallacy G.

- One (the "divisionist" theory) is that motion is *infinitely divisible*, so that there is no time at which the moving thing (be it physical or mental) is at rest. This theory does not in itself exclude the possibility of rest, since it leaves open the possibility that there are times and places devoid of motion; it only specifies that, at least *when and where* motion occurs, it is infinitely divisible.
- The other (the "atomist" theory) is that motion is *discrete* or "atomic", a fitful succession of *instantaneous* motions and *momentary* rests. According to this theory, motion as such takes no time (an instant is a point in time), only rest takes time (a moment is a duration of time). When something moves, it exists first in one place then in quite another *without traversing intermediate places*. The moving thing can never be said to have *stopped existing* momentarily, i.e. for any duration of time, since it switched places instantaneously, i.e. in zero amount of time.

Both these theories are compatible with rest, as well as motion. But the second one *implies* rest as real, whereas the first one only *allows for* rest as real. Many philosophers, including Nagarjuna as a Buddhist[21], go one step further and regard that *everything is really in constant flux*, so that rest is only (somehow) illusory. This thesis, note well, is a possible though not necessary offshoot of the first proposition, and logically implies it since not compatible with the second. Now, we cannot simply deny it as an arbitrary generalization, because it has a lot going for it in a large context of empirical and rational considerations. Namely, it seems implied by modern physics, which seems to reduce everything to wave motions (fields), and this idea in turn (generalized beyond the physical realm) provides us with a neat explanation of "universals" (i.e. abstracts) as the shapes and measures of the waves constituting all things[22].

So we have to conceive some respect in which rest might differ from motion experientially, so that although both are indubitably phenomenal (perceived, concrete, experiential, empirical), whether on a physical or mental level, we can still label the one illusory and the other real. We might propose that physical rest is only *superficially* apparent, due to our sensory inability to observe the motion which constantly underlies it; that is, *because our sense-organs are limited in the degree of detail they allow us to perceive – limited in both space and time – we only perceive fragments of physical reality and those fragments we fail to perceive we treat as absent*. Similarly with regard to imaginary entities (i.e. mental projections) – we may not be perceiving all their details.

This thesis is credible and consistent, and indeed confirmed by various experiments. It does not appeal to a concept of illusion based on the mind-body distinction, but rather to an "optical illusion" effect (not limited to the visual field, but analogously applicable to all the sense-modalities, and to imagination). It does not say that what we perceive is wrong (which would lead to self-contradiction), but only that we do not perceive everything that is there (conceptual considerations may suggest this without self-contradiction). The issue is, does this thesis succeed in differentiating experienced rest from experienced motion, condemning the one as illusory and justifying the other as real?

We might succeed, by saying that every (perceived) fragment of (infinitely divisible) motion is still motion, whereas a (perceived) fragment of rest may upon further division be found to conceal underlying motion. Thus, although both motion and rest are undeniably present on the perceptual level (in both the material and the mental phenomenal fields), we may still on a conceptual level give the one ontological precedence over the other. The Atomist hypothesis implies both motion and rest to be equally real, but the hypothesis of Divisionism only demands that motion be real, allowing for the possibility that rest be real (limited or moderate version) or unreal (general or extreme version). We can thus conceptually 'explain away' the phenomenon of rest as imperfectly perceived motion. Since the perception of rest is not dismissed, but only conceptually 'reduced' from rest to motion that has been only roughly experienced, this is epistemologically acceptable.

Let us now return to Nagarjuna's premise that "motion and rest are relative to each other". He does not ultimately believe in either motion or rest, remember, but considers these concepts tied within ordinary consciousness. In the light of our above analysis, we have to deny such a strong relationship between these concepts. It is possible to affirm both motion and rest, conceptually (through "moderate divisionism" or "atomism") as well as empirically –

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21 We have already cited Heraclitus as the first Western philosopher known to have done so.

22 It might be that waves and universals can be assimilated by an atomist theory, but to my knowledge no one has tried and succeeded in doing this – so in the meantime we may assume it cannot be done.

although we may choose not to adopt this course for various reasons (such as our need for a theory of "waves" in Physics or a theory of "universals" in Philosophy). It is also possible to affirm motion, while denying rest – we have just done so, with reasonable consistency, at least on a hypothetical level (in "extreme divisionism"). A world in universal and continuous flux seems conceivable, even while admitting the empirical status of both motion and rest, by considering the coarseness or graininess of the objects of perception. We cannot, however, affirm rest and deny motion, or deny both rest and motion; motion must be in any case affirmed.

7. Causality

Causality is a central concept in Buddhism. In Western philosophy, the term is applied generically to causation (a relation of "constant conjunction" between any two events[1] – physical events, and likewise "psychological" events) and to volition (the relation between a conscious being and an action willed by it). For Indian and Buddhist philosophy, an additional connotation of causality is the moral concept that has become colloquial in the West under the name of *karma* (the belief that good deeds are ultimately rewarded and bad deeds punished, whether in a present lifetime or a later one – and indeed that we have to be reborn to bear the consequences of our actions, at least until we find "liberation" from this cycle). Buddhism additionally (and if I am not mistaken, originally and exclusively) has a concept of "co-dependency" (according to which, roughly put, nothing stands on its own, but everything exists only by virtue of its direct or indirect causal interrelationships with other things).

A definition of causality traditionally cited in Buddhism is[2]: "When this is, that is; this arising, that arises; when this is not, that is not; this ceasing, that ceases." It is an excellent definition of causation, or more precisely the strongest type of causation – namely *complete and necessary causation*. It is better than the definition "constant conjunction", proposed by some Western philosophers, which only refers to complete causation[3]. But the said traditional formula is not accurate. First because there are other, *weaker* types of causation, namely, complete but contingent, partial though necessary, and neither complete nor necessary – and derivatives of these. And second, because causation does not include volition. In truth, if we study the actual descriptions of "co-dependency" in Buddhist texts, it is easy to see that the causal relations referred to do not all fall under the stated definition of causality (as "when this is, that is", etc.) but range far more widely over the many other senses of the term.

For earlier Buddhists, and Buddhists of other schools, causality is an objective fact, which gives rise to and implies "co-dependency" and thence "emptiness". But for Nagarjuna and his school, all these concepts and tenets are ultimately mere "conventional" truths, without real validity. Thus, although they are Buddhist doctrines, and he admits their value as initial teaching tools, he regards it as necessary to ultimately disown them, so as to go beyond the discourse they involve, into non-discursive consciousness of actual emptiness. For him, it is useless and counterproductive to talk about emptiness, to analyze and reason it – it has to be lived. It should not surprise us, therefore, that he tries to disprove causality, to show all concepts of it to be confused and absurd.

(a) Let us first consider Nagarjuna's argument concerning "production", as presented by Cheng[4]. It has the same dilemmatic form as some of his arguments about motion and rest. He divides the "process of production" into three parts. The part "already produced" is "finished" and the part "yet to be produced" is "not yet"; so neither of these can be "established". The part "being produced" can be "established" only if the aforementioned two parts have been; so it too cannot be "established". Hence,

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[1] These events may each be positive or negative; we shall clarify this further on. The point to note here is that cause or effect here may be motions or qualities, and their purported relation is "mechanistic".

[2] For this formula, see p. 84. The discussion of Nagarjuna's treatment of causality is found mainly in pp. 83-88. Cheng there refers to MT XV:1a,2a,2b, XVII:1-33, XX:1-4,16-17, XXIV:18,40, and *Hui-cheng-lun*, 72, as well as to TGT I-III.

[3] I am thinking of Hume, who (as I recall) apparently only refers to constant conjunctions of positive events, say A and B, failing to consider the flip side of constant conjunction between their negations, non-A and non-B. He also ignores (as do Buddhists, in the said definition) "hindrance", i.e. cases of constant conjunction between A and non-B, and between non-A and B. Of course, if all such cases of causation are considered as implicitly intended in the expression "constant conjunction", then it is equally acceptable. J. S. Mill's later treatment is much better, though also it has its faults. Note additionally, that "when this is, that is; when this is not, that is not" seem to logically imply "this arising, that arises; this ceasing, that ceases", so that the latter is redundant as definition, though well to point out and remember.

[4] On p. 37.

"the act of producing is impossible"; and therefore, "there cannot be a producer". They are both "unreal" and "involve contradictions or absurdities".

We can reply as follows. For a start, let us note that Nagarjuna (in Cheng's account, at least) does not even define what he means by "production", he merely takes the term for granted. The full causal connotation of the term is admittedly hard if not impossible to define (no one, to my knowledge, has so far succeeded in doing so), but I submit that no concept can definitely be proved or disproved without some definition, so we can doubt Nagarjuna's "refutation" of production on this ground alone. But let us, like him, take the term as understood (I do suggest a working definition further on), and consider his reasoning anyway.

The first two premises typically rely on a possible confusion in the reader between the present tense ("the act of producing") and the past and future tenses ("already" and "yet to be" produced). Of course, if we artificially freeze the present tense in the present, as he does, we cannot find ("establish") it in the past or future tenses.[5] But if we consider the past as having once been the present or the future as the eventual location of the present, there is no difficulty in saying that "the act of producing" *was in what is now and since then* classed as "already produced" or *will be in what is now and until then* classed as "yet to be produced". The reasons he gives in his two premises, "it is "finished" and it is "not yet", beg the question and do not constitute proof that production cannot be "established" outside the present.

His third premise, that the "act of producing" can be "established" in the present only by being so in the past and future, is gratuitous[6], and only serves to again demonstrate that his conclusions are foregone. Why would we need to refer to past or future, to *infer* the present situation? We can well find the "act of producing" directly in the present, by *empirical* means. Watching someone go through certain motions, which are exclusively and invariably[7] followed by certain perceived changes in his environment, we name the someone "producer", his motions "production", and the changes "products" (this sentence, by the way, can serve as an inchoate definition). Clearly, when I say this is empirical, I mean empirically-based. The statistical reasoning involved, and many other underlying presuppositions such as memory of past instances and comparison between instances, are conceptual and logical. We cannot establish production by means of a *single* present perception, but have to appeal to past perceived instances and ensure that future perceived instances keep concurring. Nevertheless, all that is more direct than what Nagarjuna proposes.

In sum, Nagarjuna's argument is merely an attempt to delude us, and in no way justifies his conclusion against the concept of production. As for the concept of producer, further discussion is required. I have already, higher up, discussed one issue involved, that of the existence of a substratum to *motion* – for the producer is conceived as an abiding entity. But of course, we also have to here point to the implied issue of *causality*. The term production is colloquially applied even to a machine, but ultimately it signifies human invention, initiation and supervision of a process – that is, consciousness and will. A machine is merely a *tool* of production, not a producer – the latter term only properly applies to human beings (or entities with similar powers). But we need not try to deal with this more difficult issue here, as it does not arise in the context of Nagarjuna's above argument.

(b) Another argument of Nagarjuna's relates to whether an effect is "real in" or "unreal in" a cause ("or an assemblage of causes and conditions"). The meaning of this question will become apparent as we develop his answer. For him, the question is fourfold, not just twofold – the effect might also be "both real and unreal in" or "neither real nor unreal in" the cause (see discussion of the tetralemma, above). Cheng relates his argument as follows. First premise: "if an effect is real in a cause," it does not need to be "produced again" – "there cannot be causal production" since "nothing new is produced" in such case. Second premise: "if an effect is at the outset unreal in a cause and yet is produced by a cause, then in principle anything should

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5 See Appendix 1: fallacy H.

6 See Appendix 1: fallacy D.

7 To repeat, "exclusively and invariably" (making possible and necessary) is only the strongest case; weaker causations include exclusively but not invariably (only making possible), invariably but not exclusively (only making necessary), and others (partial contingent causation, i.e. conditional causation).

> **be capable of being produced from anything else" – "there would be no particular or distinct relation between the two, and hence one would not be the cause of the other." Third premise: an effect cannot be "both real and unreal in" a cause, "because real and unreal are contradictory in nature" and such things cannot be "together". Fourth premise: "to say that an effect is neither real nor unreal in a cause is tantamount to accepting that there is no causal relation between cause and effect." Conclusion: "none of these can be established, and thus theories of causality should be renounced."**

Many objections can be raised to this argument. For a start, we can again point out that Nagarjuna (or perhaps only Cheng) does not define causality precisely – so how can he succeed in disproving it? Similarly, the expressions "real in" and "unreal in" are left very vague. Nevertheless, we can rephrase his question as, more clearly: is the effect already *present* or not in the cause? His first two premises are then: if yes, it did not need to be caused; if no, how could it have been caused? My answer is this: Nagarjuna is ignoring or obscuring the (very Aristotelian) distinction between merely *potential* presence and *actual* presence.[8] We can say that the effect is to some degree present, in the sense of potential, in the cause; it only becomes fully present, in the sense of actual, under appropriate conditions.

> For example: a healthy woman has in her womb, potentially but not actually, sons, grandsons, etc. Concretely, that potential has actual expression in her physiological characteristics (womb, eggs, genetic make-up, etc.); but her descendants are still not actual; they are *actualized* only when and if certain existential and biological conditions are met (she remains alive long enough, she has intercourse and is fertilized, she bears a son, then her son in turn finds a woman, and so forth). The woman is not the *complete* "cause", in any case (other factors come into play, positively or negatively); the son, grandson, etc. are not *to the same degree* her "effects" (her son is more of an effect of hers than her grandson, etc.) since more and more conditions have to be met.

These concepts are quite reasonable, so Nagarjuna's attempted denial cannot be upheld. Furthermore, note that the things we call the "cause" and the "effect" do not merit this label *until and unless* causality takes place (and is known to have done so); it is only after such event that the terms become applicable, so that it is absurd to apply them to things while denying such event, as Nagarjuna tries.[9] Also, it is important to clarify what we mean by "the" cause or "the" effect. Nagarjuna focuses on one of the conditions involved (in the example given, a woman), and ignores the others (her healthy fertilization; successive generations of women and their fertilizations, in turn); likewise, he does not distinguish between direct effects (her son) and indirect ones (her grandsons, etc.).

Thus, his first two premises are misleading – for an effect is potentially present in a cause, in the sense that certain conditions are actual in it; but the effect is not actually present in that cause, because certain additional conditions are not actual in it. When the latter conditions are actualized, they – together with the already actual former conditions – cause actualization of the effect. The sum of the earlier and later conditions may be referred to as "the" cause; whereas each of these sets of conditions can only properly be referred to as "one of the causes"; each is only *a potential* cause without the other. Similarly, we have to distinguish between an effect of this total cause, and an effect of an effect of it, and an effect of an effect of an effect of it, etc. In each case, additional conditions come into play, and what was admitted *the* cause of the earlier effect, may only be regarded as *a* cause (among others) of the later effect. Nagarjuna uses the terms cause and effect without any effort at precision[10]; is it no wonder then that he formulates false premises.[11]

With regard to his claim in the first premise that "nothing new is produced", then, we would reply that there is novelty in the intensification of existence from a inchoate, potential degree to an overt, actual degree. As for the reasoning he uses in his second premise, the following may be offered as rebuttal.

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[8] See Appendix 1: fallacy F.

[9] See Appendix 1: fallacy G.

[10] It is interesting to note that Cheng earlier (on p. 85) mentions, parenthetically, that a cause may be understood as "an assemblage of causes and conditions". For it shows that Nagarjuna is aware that a cause is not necessarily monolithic, and indeed this awareness is found in Buddhist doctrine from its inception.

[11] See Appendix 1: fallacy E.

He argues that if an effect were not present at the outset in a cause, then any other effect might "in principle" emerge from the cause, so that in fact no relation would exist between the cause and any such effect. To make the issue clearer, let us remove the terms cause and effect from the sentence, since as already stated they may not be used before a causal relation is established. Indeed, "in principle" a thing might be accompanied or followed by just anything. This only means that, at first glance, before any data has been gathered, we must have an open mind and look at the facts without prejudice, without anticipation – this is the *epistemological* principle he seems to be referring to, and the one we would admit. He cannot be taken to appeal to an *ontological* principle, that everything occurs by happenstance, without connection to anything else – for that would be begging the question, surely. But of course, Nagarjuna cunningly obscures the wide and deep gulf between these two senses of the term "in principle" to make his point.[12]

But this is in itself interesting, because it shows that he is quite aware of the reason why we formulate a concept of causality and believe in it, and of the inductive process through which such a relation is established. *If* we lived in a world (or field of appearances, to be more precise) where, indeed, anything could happen, i.e. a world without any regularity, *then* we would have no basis for a concept of causality, and no such concept would even occur to us.[13] *But* we notice in our experience that some things are constantly conjoined (and so forth – this is just one of the many types of regularity), and *therefore* – in order to record and explain such uniformities in our experience – we form a concept of causality. Furthermore, we use these very same observed regularities to determine whether or not the label of causality may be applied in particular cases. There is thus nothing arbitrary in the concept, nor in its applications; it is experience that suggests it, and experience that establishes it.

There is nothing circular in the concept, either. Nagarjuna denies that causation can be established with reference to experience, saying that this "begs the question"[14]. Even though "we have seen sesame produce sesame oil, but have never seen sand produce sesame oil," we are not justified to "seek sesame oil in sesame but not in sand" because "causation or production has not yet been established, and so one cannot legitimately make that claim." But as just explained, this is not *the order of things* in knowledge. Both the concept and its particular applications come from the same experiences. We have a concept of causation because we observe regularities and these same regularities tell us where to apply it. There is no basis for a demand that the concept be known independently of experience. The reason why the concept seems to exist "independently" of *any one* of its empirical instances, is that it is the common feature of *many and indeed all* instances of regularity, and does not merely refer to *the one* regularity under scrutiny at one particular time.

Thus, Nagarjuna should have said the following: if some *thing* and another *thing* are *always* apparent together and *never* apparent apart, then we may call the one "cause" and the other "effect" and their relation to each other "causality" (this is only the strongest form of causation, to repeat, but I do not want to needlessly complicate the issue here); but if *no such regularity* (nor a lesser degree of regularity) occurs in their appearances (i.e. our experience of them, in a first phase, and by generalization, their existences), then they cannot be called thus. Had he formulated the sentence in this way, he would have had no argument. He chose to confuse the issue or was himself confused, by anticipating application of causal terminology, and by failing to distinguish between epistemological and ontological aspects.

Let us turn now to his last two premises. They logically add nothing to the present argument about causality, but they are interesting as denials by Nagarjuna himself of his previously expressed or implied views about the tetralemma (see higher up). Here, he admits that contradictories (like "real in" and "unreal in") cannot "be together". Likewise, he admits that negative contradictories in conjunction (like "not real in" and "not unreal in") are not a further kind of meaningful relation (in the present case, a "causal relation"). This shows that he understands the Laws of Non-contradiction and the Law of the Excluded Middle, and appeals to them when he finds it convenient for his ends. It makes us, once again, doubt his sincerity.

(c) Cheng lists another five issues concerning causal relations raised by Nagarjuna, but does not present the latter's arguments about them, other than to say that he "criticized each relation more or less the same way." We

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12 See Appendix 1: fallacy F.

13 See Appendix 1: fallacy G.

14 Cheng, p. 87.

may infer from this that Nagarjuna tried to show, using his usual methods, these various questions about causality unanswerable or absurd in some way. The questions he asked were the following.

- **Is a cause "identical" or "different" to an effect?**
- **Do a cause and an effect "appear simultaneously" or not?**
- **Does a cause "become" an effect or not?**
- **Does a cause "before it ceases to be, give a causal nature to" an effect or not?**
- **Is a cause "within" an effect or is an effect "within" a cause?**

Let us consider what his arguments might be, and how we would answer his questions and preempt his skeptical conclusions.

With regard to the first issue, my guess is that Nagarjuna would argue, as he did in similar circumstances[15], that if cause and effect are "identical" there is no point in naming them distinctively, and if they are "different" there can be no connection between them. But we can easily reply that they are not identical, and that difference does not imply disconnection.

With regard to the second issue, knowing Nagarjuna, he would presumably complain that if two things appear simultaneously we cannot regard one as causing the other; and if they do not appear simultaneously, how can we establish that they are linked? Philosophers who insist that causality requires that the effect *temporally* follow the cause, are focusing on one mode of causal relation, that in dynamic process (as for instance, in natural causation); but in truth, we also commonly acknowledge static causal relations (in the extensional mode)[16], and even simultaneous events in dynamic processes may be causally ordered. It is only after we have established that two things, features or events are *regularly* together and/or apart to some degree, and therefore causally related, that the decision as to which to regard as cause and which as effect arises. This issue may in some cases be quickly resolved with reference to time's arrow: the cause is the temporally earlier, the effect is the temporally later. But this is only one resolution, the simplest case. If the two items are simultaneous, we can still order them on other, more conceptual grounds. For instance, we will consider the more generic item as cause, the more specific as effect, judging the former as a 'deeper' (more widely present) aspect of nature than the latter.

With regard to the third issue, I am not sure what Nagarjuna means by a cause becoming an effect (or not). Perhaps he is referring to the frequently used Buddhist image of a seed becoming a plant? I would guess in such case that he plays on the ambiguity of the word "plant", i.e. on whether it refers to any of its stages (including as a seed) or to a developed plant (excluding the seed). If so, we can forewarn that the word 'becoming' has two colloquial senses: a stronger sense of mutation (for which let us reserve the same word) and a weaker sense of alteration (for which let us prefer the expression 'getting to be'). In mutation, the change is from 'X and not Y' to 'Y and not X'; whereas in alteration, it is from 'X and not Y' to 'X and Y'[17]. Thus, in our example, the plant is initially a seed, then 'gets to be' a developed plant; or, in other words, the seed (undeveloped plant) 'becomes' a developed plant.

The fourth question is likewise unclear – what does he mean by the cause "giving causal nature to" the effect? I presume the pronoun in "before *it* ceases to be" refers to the cause, and that he is asking whether some sort of power of causation is *transferred* from cause to effect in causal chains. If that is his concept, or the concept he attributes to ordinary thinking, I would beg to differ. We do not regard that, in all causal chains, cause A gives its effect B the power to be cause B of effect C, i.e. that A does not merely cause B, but also *causes B to cause* C.

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[15] With regard to the subject-predicate relation, in argument 4(a), and the object-characteristics relation, in argument 5(d).

[16] That this is acknowledged in Buddhism is evident in the traditional definition of causality earlier mentioned. The statements "when this is, that is; when this is not, that is not" refer to static causation; the statements "this arising, that arises; this ceasing, that ceases" refer to dynamic causation. These statements are (I seem to remember and presume) attributed to the Buddha himself in some sutra, and demonstrate commendable precision of thought. Static and dynamic causation may be viewed as two aspects of the same relation, or we may view the latter as a special case of the former (since given the former, we can infer the latter).

[17] See my *Future Logic*, ch. 17.

This may be true when both the successions A-B and B-C are invariable, i.e. in the one case of *complete* causation; for in such case, we may say that A is invariably followed by both B and C, i.e. that A causes C as well as B. But this is one special case of regular succession – when the causations involved are of mixed determination, the syllogism is not always possible. Furthermore, in some instances (where A is not a necessary cause of B) it is still possible for "B causes C" to occur in the absence of A, when B is caused by something other than A.

One might anyway wonder at the legitimacy of an *iterative* causal concept "causing to cause", in the above implied sense, for we regard "B causes C" as a relation and event that just "is", a *fact* of ("caused by", if you like) "Nature" – not as something that something else (viz. "A"), itself *within* nature, might "cause". The iterative concept occurs somewhat legitimately in volitional situations, where we may say that an agent A (a person) influences or forces another, B, to perform some action, C. But in such cases, the causality involved is very different, clearly. 'A influences B' is a sort of causality, but it does not mean A causes B in the sense of causation. Nor is 'B does C' a causation, but a volition. So in this case, the iterative concept is quite different in meaning.

As for the fifth issue, I presume we have already dealt with the question as to whether the effect is "within" the cause when we discussed whether the effect is "real in" the cause. So only the question, is a cause "within" an effect? remains to be answered. Supposedly Nagarjuna has in mind here some kind of lingering existence of the cause in its effect. This could be conceived, and is indeed used as an explanatory hypothesis in some causal situations. Thus, Newton's theory of motion of physical bodies after impact postulates that "energy" is the substratum of motion; the first body's motion is an expression of the energy in it, and when it hits the other some or all of that energy is passed on to the second, which therefore moves or changes velocity and/or direction in accord with precise formulas. This theory involves calculated predictions, which are empirically confirmed[18]. In this context, the second body is caused to move by the first, but the underlying cause of both their motions is "energy".

In that case, we might say to Nagarjuna that we have a case in point, where the cause is "within" the effect. I do not, however, think that this is necessarily or always appropriate, in every causal relation, or even in every causation, to say that the cause is "within" the effect. For we establish causation primarily with reference to constant conjunction of presences and/or absences of two things, without prejudice as to whether some third thing is passed on from the one to the other. For us, causation is at first just a happenstance of regularity observed in the field of appearances. A theory may later be inductively established that some sort of transfer always occurs in it, but this would at best be a generalization warranted by confirmed predictions, not a deductive necessity. We should at least remain open-minded to either outcome in principle.

In sum, having with reference to his five vague questions anticipated Nagarjuna's possible additional arguments against causality, we can safely say that his intended refutations of the concept are here again likely to be fallacious and inconclusive.

[18] Later, the energy transfer idea is found valuable in other contexts or domains. Later still, be it said in passing, the theory is corrected by Einstein, for greater empirical precision.

8. Co-dependence

- **One further argument mentioned by Cheng[1] goes like this: Nagarjuna questions the legitimacy of an "ontological interpretation of causation" that claims "an entity which has essential nature" can be "something which is caused". In his view such claim is contradictory, for "an entity is supposed to have essential nature and a thing of essential nature is not produced but independent of other things" and "to be caused is to be conditioned or to be dependent".**

This argument evidently refers back to the belief of Indian philosophers that an existent is either permanent and uncaused or momentary and caused. But these temporal and causal notions are not as tied together as Indian philosophers assumed. If we look at their actual genesis in the formation of human knowledge, we see that they in principle allow for intermediate combinations, like "caused and henceforth permanent" or "momentary yet uncaused".

Furthermore, the concepts of "entity" and "essence" are very confused in Nagarjuna's and the Buddhist mind. They do not fully realize that these concepts refer to continuities, individual (in the case of "entity") or collective (in the case of "essence"), which are assumed so as to register and explain experienced repetition of objects. These are not mysterious, arbitrary inserts in the course of human knowledge, but statistical tools for recording and comprehending certain pluralities of experience.

In attacking causality, Nagarjuna effectively also attacks the Buddhist concept of co-dependence, which is normally considered one of the main bases for, or the causal expression of, the fact and doctrine of "emptiness". Here, as elsewhere, he is not antipathetic to Buddhist belief, but convinced that only by disowning all concepts and doctrines – including causality and co-dependence – can we in fact get in contact with what they merely point to. The finger pointing at something, however accurately, gets in the way and distracts us from that thing, and is therefore best dropped.

Let us venture more deeply into the Buddhist doctrines at issue. I cannot here engage in their detailed analysis, thorough treatment requires a whole book (see my forthcoming publication on causal logic). But I will make a few pointed remarks. The Buddha was previously understood as regarding all phenomena as mutually causally related, interdependent, 'co-dependent' – suspended together in the field of appearance without underlying causes and unable to exist in it without mutual sustenance.

Admittedly, all that we perceive is a succession of present phenomenal fields. But by means of our rational faculty, we then subdivide such overall phenomena into constituent phenomena (discernment), and by comparison and contrast find them same or different in various respects and degrees (abstraction), and thereby variously group and name them (classification), and then interrelate them (e.g. causally, with reference to perceived regularities). Such rational work is admittedly hypothetical, but that does not mean it is automatically false. It does not have the same epistemological status as empirical evidence, but may be relied on with various degrees of probability, to the extent that it takes such evidence into account and is guided and regulated by the three Laws of Thought, and the rules of deductive and inductive logic derivable from them.

Our belief in "entities", as already explained, arises in order to explain the apparent similarities between phenomena that have succeeded and replaced each other in our experience. Such phenomena are partly different (changed), but also partly the same (abiding). If they were only different, we would have no call for a concept of "entity"; but because they are also the same, we do need such a concept to register

[1] See pp. 87-88. Cheng there refers to MT XV:1a,2a,2b, XVII:1-33, XXIV:18, and *Hui-cheng-lun*, 72, as well as to TGT II.

the fact. Note that sometimes, assumption of an "entity" underlying perceived phenomena is reference to an *additional, not yet perceived* phenomenon; other times, assumption of an entity is simply reference to a collection of already perceived phenomena, i.e. the entity is *no more than the conjunction* those phenomena. Once thus understood, the concept of entity is seen to have nothing antithetical to a positivistic approach to knowledge.

Similarly with our belief in "essences", which arises in response to our experiences of similarity as well as difference between phenomena, even in static situations. If, in our experience, nothing resembled anything else (extreme multiplicity) or if everything seemed identical with everything (extreme uniformity), the thought of "essences" would not even dawn on us. Assumption of an "essence", once we demystify it and remove its idealistic connotations, and understand it as an expression of work of comparison, it loses the scarecrow status given it in Buddhist epistemology.

"Causality", as we have already shown, may be similarly justified with reference to regularities of conjunction of phenomena (or more precisely, their presences and/or their absences). Thus, these fundamental concepts have empirical basis, they are not merely arbitrary constructs.

Now, let return to Nagarjuna's ideas. One of them is that *an entity or essence cannot come and go or be caused*. It has to be seen that this is a particular (not to say, peculiar) thesis *proposed* by Indian philosophers, and not one inherent in the concepts involved. This proposition is not analytically obvious, and may only be regarded as an additional hypothesis to be synthetically established. It is not deducible from the initial conceptions, which (as above described) refer to various sorts of uniformities or regularities; it would have to be demonstrated by induction (grounded in some sort of empirical evidence) that these uniformities and regularities *coincide* as proposed. Otherwise, it is arbitrary (from our ordinary consciousness point of view, though it may be obvious to enlightened consciousness).

The initial concept of an entity only stipulates continuity in the midst of change; it does not preempt that such assumed substratum as a whole may itself appear or be generated, or disappear or be destroyed. Indeed, the fact that we commonly speak of entities as limited in time and as susceptible to initiation or termination shows that we do not ordinarily view entities so rigidly. For example, those who believe in a soul may view it as naturally arising (an epiphenomenon of matter) or as divinely created (an injection into matter), as temporary or eternal (in past and/or future) – the concept of soul leaves such issues open to debate. Similarly, the initial concept of an essence only requires that the abstract exist wherever and whenever the concretes it is attached to exist; when and where the concretes come or go or are caused to come or go, the abstract may in a sense be said to similarly behave or be affected (though strictly speaking such concepts are inapplicable to abstracts, as already discussed).

Another Buddhist idea, that of 'co-dependence', which might stated broadly as *each thing exists only in relation to others;* and furthermore, since each other thing in turn exists only in relation to yet others, *each thing exists in relation to all the others*. The relation primarily intended here is causality, note. We tend to regard each thing as capable of solitary existence in the universe, and ignore or forget the variegated threads relating it to other things. We 'do not see the forest for the trees', and habitually focus on individual events to the detriment of overview or long view.

> For example, consider a plant. Without the sunlight, soil and water it depends on, and without previous generations of the same plant and the events that made reproduction possible and the trajectories of each atom constituting and feeding the plant, and without the cosmic upheavals that resulted in the existence of our planet and its soil and water and of the sun and of living matter, and so forth *ad infinitum*, there would be no plant. It has no independent existence, but stands before us only by virtue of a mass of causes and conditions. And so with these causes and conditions, they in turn are mere details in a universal fabric of being.

The concept of co-dependence is apparently regarded by Buddhists as an inevitable outcome of the concept of causality. But reflection shows, again, that this doctrine is only a particular thesis within the thesis of causality. That is, though co-dependence implies causality, causality does not imply co-dependence. Moreover, it is a vague thesis, which involves some doubtful generalizations. The above-cited typical example of co-dependence suggests three propositions:

- *everything has a cause (or is an effect),*
- *everything has an effect (or is a cause);*

and perhaps the more radical,

- *everything causes and is caused by everything*.

The first two propositions are together what we call '**the law of causality**'. It has to be seen that these propositions do not inevitably follow from the concept of causality. The latter only requires for its formation that *some* regularity of co-existence between events be found in experience, but does not in itself necessitate that *every* event in experience be found to have regular co-existence with some other event(s). The *concept* of causality is valid if it but has particular applications; the *law* of causality does not automatically follow – it is merely a *generalization* from some experiences with this property to all existents. There may well be things not found to have regular co-existents, and thence by generalization assumed to have no cause and/or no effect. A universe in which both causality and non-causality occur is quite conceivable. Furthermore, the first proposition does not logically imply the second or vice versa – i.e. we may imagine things with causes but no further effect, and things with effects but no preceding causes.

"Early Buddhists", Cheng tells us, "believed in the principle of causality to be objectively, necessarily, eternally and universally valid." Many Western philosophers have concurred, though not all. Today, most physicists believe that, on a quantum level at least, and perhaps at the Big Bang, there are events without apparent cause. I do not know if events without effect are postulated by anyone. In any case, we see that even on the physical level "chance" is admitted as a possibility, if not a certainty. The law of causality can continue to serve us as a working principle, pressing us to seek diligently for causes and effects, but cannot in any case be regarded as an *a priori* universal truth. Causal logic has to remain open-minded, since in any case these "laws" are mere generalizations – inductive, not deductive, truths.

Furthermore, the law of causality just mentioned is only at best a law of *causation*. Philosophers who admit of *volition*[2] cannot consistently uphold such a law as universal to all existents, but only in the 'mechanistic' domains of physical and psychological events. With regard to events involving the will, if we admit that a human being (or equivalent spiritual entity, a higher animal or God) can 'will' (somehow freely produce) a physiological event (i.e. a physical movement in his body) or a psychological event (i.e. an imagination, a mental projection), or even another soul (at least in the sense of choosing to reproduce), we have to consider this as an exception to such universal law of causation.

Also, if we consider that the Agent of will is always under the *influence* of some experience or reason, we might formulate an analogical law of causality with reference to this. But influence is not to be confused with causation; it does not determine the will, which remains free, but only strengthens or weakens it, facilitating or easing its operation in a certain direction. Moreover, it is not obvious that will cannot occur 'nihilistically', without any influence; it may well be free, not only to resist influences but also to operate in the absence of any motive whatsoever. In the latter case, the law of causality would again be at best a working principle, not a universal fact that volition requires a motive.

Let us now consider the more extreme statement that 'everything causes and is caused by everything', which could be construed (incorrectly) as implied by co-dependence. To say this is effectively to say paradoxically (as Nagarjuna would no doubt have enjoyed doing!) that *nothing causes or is caused by anything* – for causality is a relation found by noticing regularities *in contrast to* irregularities. If everything were regularly co-existent with everything, we would be unable to distinguish causality in the first place. It follows that such an extreme version of the law of causality is logically untenable. Causality cannot imply that 'everything causes everything' or 'everything is caused by everything' – and to deny the latter statements does not deny the concept, note well. The concept is not derived from such a law, but independently from observation of regularities in experience; our ability to discern such regularities from the mass of experience implies that there are irregularities too; whence,

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[2] And at least some Buddhists seem to. For instance, the statement in the *Dhammapada* (v.165) that "by oneself the evil is done, and it is oneself who suffers: by oneself evil is not done, and by one's Self one becomes pure. The pure and the impure come from oneself: no man can purify another" – this statement seems to imply existence of a self with responsibility for its actions.

such an extreme statement cannot be consistently upheld. We must thus admit that things do not have unlimited numbers of causes or effects.

Although 'everything causes everything' implies 'co-dependence', the latter does not imply the former; so our refutation of the wider statement does not disprove co-dependence, only one possible (extreme) view of it. My criticism of co-dependence would be the following. For a start, the doctrine presented, and the illustrations given in support of it, do not use the term causality with any precision. First, as we have suggested above, *causality, is a broad term, covering a variety of very distinct relations*:

- causation or 'mechanistic' causality within the material and mental domains, and causation itself has many subspecies;
- volition, or action by souls on the material or mental or spiritual domains, and will has many degrees of freedom; and
- influence, which refers to limitations on volition set by material or mental or spiritual entities.

The doctrine of co-dependence glosses over the profound differences between these different senses of the terms 'cause' and 'effect', using them as if they were uniform in all their applications.

Also to be included as 'causal relations' in a broader sense are the *negations* of these relations. Even if some philosopher doubts one, two or all three of these (positive) relations, he would have to consider them. Concepts of 'chance' or 'spontaneity' are not simple, and can only be defined by negating those of causality; likewise, the concept of 'determinism' requires one of 'free will'. It is only in contrast to causality concepts, that non-causality can be clearly conceived. Furthermore, co-dependence ignores that *some* things are not (positively) causally related to each other, even if they may have (positive) causal relations to other things. *That something must have* some *cause or effect, does not imply that it has* this or that *specific thing as its cause or effect; there are still things to which it is not causally related*. If everything had the same positive causal relation to everything, and no negative causal relation, there would be no such thing as causality, nothing standing out to be conceived.

Secondly, if we consider chains (or, in discourse, syllogisms) of causal relations, we find that *the cause of a cause is not necessarily itself a cause*, or at least not in the same sense or to the same degree. For instance, with reference to causation, we can formally prove that if A is a complete cause of B and B is a complete cause of C, then A is a complete cause of C. But if A is a complete cause of B and B is a partial cause of C, it does *not* follow that A is at all a cause of C. Similarly, when we mix the types of causality (e.g. causation and volition in series), we find that causality is not readily transmitted, in the same way or at all. It is therefore logically incorrect to infer transmission of causality from the mere fact of succession of causal relations as the theory of co-dependence does.

Thirdly, those who uphold co-dependence tend to *treat both directions of causal relation as equivalent*. Thus, when they say 'everything is causally related to everything', they seem to suggest that being a cause and being an effect is more or less the same. But something can only be regarded as a cause of things occurring after it in time or below it in conceptual hierarchy, and as an effect of things occurring before it or above it. Upstream and downstream are not equivalent. Thus, 'interdependence' cannot be taken too literally, using 'causal relation' in a too vague sense, without attention to the distinction between causal and effectual relationship.

Fourthly, the doctrine of co-dependence suggests or calls for some sort of law(s) of causality, and as already discussed higher up, no universal or restricted law of causality is logically necessitated by the concept of causality, although such a law may be considered a hypothetical principle to be validated inductively. The concept of causality only requires that *some* causality occur, without prejudicing *how much*. So, though co-dependence implies causality, causality does not imply co-dependence.

Fifthly, the concept of 'co-dependence' is upheld in contrast and opposition to a concept of '*self-subsistence*'. Something self-subsistent would exist 'by itself', *without need of origination or support or destructibility*, without 'causal conditions'. Buddhism stresses that (apart perhaps from ultimate reality) nothing in the manifold has this property, which Buddhism claims ordinary consciousness upholds. In truth, the accusation that people commonly believe in the self-subsistence of entities is false – this is rather a construct of earlier Indian philosophy.

People generally believe that most things have origins (which bring them into existence), and that all things once generated have static relations to other existents (an infinity of relations, to all other things, if we count both positive and negative relations as 'relations'), and that things usually depend for their continued existence on the presence or absence of other things (i.e. if some of the latter come or go, the former may go too). What is doubtful however, in my view, is the vague, implicit suggestion of the co-dependence doctrine, that *while* a thing is

present, i.e. during the time of its actual existence, it has a somehow only relative existence, i.e. were it not for the other things present in that same moment, it could not stand.

This is not essentially a doctrine of relativity to consciousness or Subject (though Yogachara Buddhism might say so), note well, but an existential incapacity to stand alone. This is the aspect of co-dependence that the Western mind, or ordinary consciousness, would reject. In our world[3], *once* a thing is, and *so long as* it is, *irrespective of* the causes of its coming to be or the eventual causes of its ceasing to be, or of other things co-existing with it in time and its relationships to those things, or of its being an object of consciousness, it simply exists. It is a done thing, unchangeable historical fact, which nothing later in time can affect. It cannot be said to 'depend' on anything in the sense implied by Buddhists, because *nothing could possibly be perceived or conceived as reversing or annulling this fact*.

What Buddhism seems to be denying here is that 'facts are facts', whatever their surrounding circumstances, and whether or not they are cognized, however correctly or imperfectly. It is a denial that appearances, whatever their content and whether they be real or illusory, have *occurred*. We cannot accept such deviation from the Law of Identity.

Such considerations lead me to the conclusion that 'co-dependence' is not easy to formulate and establish, if at all. Nevertheless, I regard it as a useful 'way of looking at things', a valuable rough and ready heuristic principle. Also, to be fair, I remain open to the possibility that, at some deep level of meditative insight I have not reached, it acquires more meaning and validity.

[3] We can, incidentally, imagine a world where only one thing exists, without anything before it, simultaneous to it or after it.

9. Karmic law

Finally, let us consider Nagarjuna's comments on the moral principle of 'karma' (as we commonly call it). **He denies karmic law – for him, "necessary connections between good deeds and rewards, and bad deeds and punishments" are, as Cheng describes**[1]**, "not objective laws in nature and society, but subjective projections of the mind".** This is of course not an argument, but a statement, so his reasoning cannot be evaluated. The statement is notable, considering the context of Indian and Buddhist belief. And again, Nagarjuna makes this statement, not out of a desire to oppose normative Buddhism, but in an attempt to be consistent with his own overall philosophical programme of consciousness beyond reason, the 'middle way'.

I will take this opportunity to make a few comments of my own regarding karma. The claim that there is moral order in the world is partly, but only partly, based on empirical grounds. Without prejudice as to what constitutes morality, we can agree that certain actions have certain consequences, and that some of those actions and consequences happen to be morally orderly by our standards. The 'actions' referred to are actions of a person; the so-called 'consequences' referred to are things happening to that person beyond his control.

It so happens that sometimes a person who has acted in a way he (or an observer) considers 'good' (e.g. being kind to others, or whatever) is soon after or much later a recipient of something he (or the observer) considers 'positive' for himself (e.g. health or children or wealth, whatever). Similarly, a 'bad' action may be followed by 'negative' events. In some of those cases, a causal relation may be *empirically* established between the 'action' and 'consequence', without appeal to a moral principle. For instance, the man works hard and prospers. Such cases can be considered evidence in favor of a karmic law. In other cases, however, the causal relation is *merely assumed* to occur subterraneously, because it is not empirically evident that such 'action' produces such 'consequence'. For instance, the man gives charity and prospers. It would be begging the question to use cases of the latter sort as evidence in favor of karmic law, since it is only by assuming karmic law that we interpret the events as causally connected.

Furthermore, it so happens that sometimes, despite good actions, no positive consequences are forthcoming or only negative ones follow; or despite bad actions, no negative consequences are forthcoming or only positive ones follow. The saint suffers and the evil man enjoys. These cases are all empirical evidence *against* karmic law, granting the value judgments involved, since we are not assuming karmic law to establish the causal relations between such actions and so-called consequences (be they happenstance or evidently produced by the actions). Of course, one might mitigate this conclusion somewhat, by stating that one has to know all the life of a person because no one only suffers and no one only enjoys, and that anyway it is difficult to estimate the merits of a good deed or demerits of a bad deed.

Thus, whereas karmic law might be viewed as a generalization from the cases where actions are empirically causally connected to consequences, it cannot be inferred from the cases where such connection is not established without presuming karmic law, and it is belied by the cases where the order of things predicted by karmic law is not matched in experience. In order to nevertheless justify karmic law, religions may introduce the concept of rebirth, on earth as a human or other creature, or elsewhere, in heaven or in hell, suggesting that if the accounts do not balance within the current lifetime, they do in the long run balance. But again, since we have no empirical evidence of such transmigration and the process is anyway very vaguely described, such argument begs the question, making the assumption of karmic law superficially more palatable, but not providing clear concept or inductive proof of it.

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[1] See p. 88. Cheng there refers to MT XVII:1-33, XXIV:18, and *Hui-cheng-lun*, 72, as well as to TGT II.

Some might hang on to karmic law all the same, by arguing that what we have been calling good or bad, or positive or negative, was wrongly so called. These postulate that a set of moral standards, of virtue and value, might be found, that exactly coincide with empirically evident causal processes, or at least which are not belied by such processes. Good luck.

> But what bothers me most about the assumption of karmic law is this: *it logically implies that whoever suffers must have previously done evil*. For instance, the millions of Jews (including children) murdered by the Nazis during the Holocaust. This seems to me an unforgivable injustice – it is an assertion that *there are no innocent victims of crime* and that *criminals are effectively agents of justice*! Thus, in the name of morality, in the name of moral order – merely to satisfy a 'rationalist' impulse to uphold a 'law of karma' – justice is *turned upside-down* and made to accuse the innocent and exonerate the guilty. Clearly, the idea of karmic law is inherently illogical. We have to conclude that the world functions differently than such a principle implies.

We seem to have reached, with regard to karma, the same negative conclusion as Nagarjuna, though perhaps through a different argument. If there is no karmic law, is there then no need for liberation, no utility to virtue and meditation? It does not follow. Even if souls come and go, like bubbles in water, it may be good for them to realize their true nature while they are around. 'Virtue is its own reward' and the benefits of meditation are obvious to anyone engaged in it.

10. God and creation

Nagarjuna sought to show[1] that it is "unintelligible to assert the existence of God as the creator or maker of the universe"[2]. He does this by means of several arguments, which I shall try to summarize, based on Cheng's account, and to evaluate. Let me say at the outset that I personally do not believe we can prove or disprove the idea of God[3], so I cannot be accused of having an ax to grind on this issue. If Nagarjuna's conclusion is deemed a disproof and denial of the concept, I am showing it erroneous. But if it is deemed a mere denial that the concept can be proved, I agree with him but am showing his reasoning in favor of such conclusion logically inadequate.

(a) One argument proceeds as follows: "if there is a fact of producing, making or creating… what is produced?" It is either the "already produced" or the "not yet produced" or the "being produced". These three alternatives can, according to Nagarjuna, be "refuted in the same way as the concept of motion", whence production "cannot be established" and therefore "it makes no sense" to affirm a "creator or maker".

The pattern and content of this argument are by now familiar to us (see higher up), all Nagarjuna does here is repeat it with reference to the universe and God. But since, as we have already shown, the argument against production is logically worthless, the conclusion against creationism and God drawn from it is also without credibility.[4] But note additionally that Nagarjuna does not, as philosophers often do, make any radical distinction between "production" in the sense applicable within the universe (which is a mere reshuffling of preexisting elements) and "creation or making" in the sense applicable to the universe (which is *ex nihilo*, or at least a conversion of the spiritual substance of God into material and other substances).

(b) The next argument we shall review is more interesting. Let us suppose that something (symbolized by an 'x') is "made or produced by someone or something". Now, x has to be made either "by itself" or "by another" or "by both" or "by no cause". But, firstly, x cannot be made by itself, for that would imply that "it makes its own substance", and "a thing cannot use itself to make itself" for that would be "reflexive action", i.e. the thing would be "both subject and object at once," which is impossible since "subject and object are different." Secondly, x cannot be made by some other thing, because the latter would be "causal conditions" and these ought to be considered as "its substance" and so would be "the same" and not "other". It follows that x cannot be made both by itself and by another. Lastly, x cannot be made by no cause, because "there would be a fallacy of eternalism".

It is not clear to me what or who is the subject, x, of this argument. It might be intended to be the universe or God. In either case, the argument seems to be that a thing can neither be self-created, nor be other-created, nor be both, nor be uncreated (i.e. neither). With regard to self-creation, I would agree with Nagarjuna that the concept is nonsensical. His second thesis, denying that something can be "made by another", is however not convincing. He claims that the causes or conditions of something have to be counted as part (of the substance) of that thing, so that the alleged "other" is in fact not "other" (implying that the concept of other-creation is self-contradictory).

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1 See Cheng, pp. 89-96 on this topic. He refers to MT XXII, as well as to TGT X, XII:1 and the last chapter.

2 Note that Nagarjuna identifies God with the Indian deity *Isvara*. Cheng wonders in passing whether this was warranted; a more accurate identification would in my view have been with the *Brahman* of Hinduism. However, this need not concern us here, for the attributes used by him to describe God correspond to those any Western philosopher would grant.

3 I normally follow a Jewish tradition that the word should be written incompletely, as "G-d" – but this has proven confusing for many people. The reason for the tradition is to avoid that the word be taken into an impure place or be physically torn or deleted.

4 See Appendix 1: fallacy D.

But we do not ordinarily count all "causal conditions" of a thing as part of it or of its substance; we might do so in some cases, if such antecedents are exclusive to that thing and no other factors can be used to define it, but usually we would regard them as separate events that bring it about.[5]

The third thesis, against "both" self and other creation, could be admitted offhand since we have admitted his first thesis that a thing creating itself (wholly, *ex nihilo*) is impossible. Alternatively, we could interpret the third thesis as referring to something partly created by another, and then that part proceeding to create the remaining parts. If we so conceive Nagarjuna's third option, as other and self creation in sequence, we have to disagree that this is impossible. As for the fourth thesis, that a thing may be created by neither self nor other, i.e. may be uncreated, again two interpretations are possible. One, which Nagarjuna mentions, is that the causeless was always there; Nagarjuna considers that impossible, in accord with Buddhist doctrine that eternity is a fallacious concept, but I have seen no logical justification of that viewpoint and to my Western mind eternity (of God or of the universe) is quite conceivable. Another interpretation, which Nagarjuna apparently ignores, is that something might arise spontaneously, i.e. pop into existence out of nothing; this is an idea which some find unconscionable, but we may accept it as at least imaginable.[6]

To summarize, Nagarjuna conceives of four scenarios for creation, and claims to find reason to reject all four, concluding that the idea of God creating universe is unthinkable and therefore that God is unintelligible. We, however, are not overwhelmed by his arguments. Only his rejection of self-creation makes sense. His rejection of other-creation is forced. His interpretations of "both" and "neither" are incomplete, and we can offer additional ones, which leave the issues open. The dilemma as a whole is therefore inconclusive, and Nagarjuna may not logically draw the conclusions he draws.[7] However, let us return briefly to Nagarjuna's second thesis, for he might be trying to formulate a more complex thought than appears.

Let us suppose Nagarjuna is discussing *whether God created the universe*. If we take "the universe" as an open-ended concept including whatever happens to exist at any one time, then God was himself *the whole* universe before He created *the rest of* the universe[8]. Viewing creation thusly, we are not talking about *ex nihilo* creation, which is a confused concept since it ignores or obscures the preexistence of something (God) doing the creating – but of an earlier universe, with *only* God in it, giving rise to a later universe, with God *plus* other things (matter, people with minds) in it[9]. The mystery of creation in that case is simply, how can a *spiritual* entity, such as the God we conceive, produce *matter,* either from nowhere (i.e. without self-diminishment) or out of itself (as the *tsimtsum* concept of creation of Jewish Kabbalah seems to suggest)? The latter idea, that God might have given something of Himself to fashion matter, does not seem too difficult to accept philosophically (though some may consider it sacrilegious, as it implies that God either was diminished thereby or consented to transform part of His spirituality, if only a tiny speck of it, to the lower status of material substance).

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5 See Appendix 1: fallacy D.

6 See Appendix 1: fallacy C.

7 See Appendix 1: fallacy B.

8 Cheng at one point (p. 92) recalls Bertrand Russell's argument against God and creationism – that while it is reasonable to inquire about the causes of particular phenomena, it is nonsensical to inquire about a cause for the totality of all phenomena. This is of course a very forceful argument, considering that (as we have seen) the concept of causality arises only in response to perceived regularities of conjunction between phenomena (here including in this term, as well as sensory or mental perceptions, intuitive experiences and conceptions). It is true that the search for causes of phenomena is always a search for other phenomena that might be regularly conjoined with them. But Russell's argument is not logically conclusive. For if God existed, and we could one day perceive Him (or a "part" or "aspect" of Him), He would simply be *one more* phenomenon. In which case, creation would refer not to causation of the *totality* of phenomena (by a non-phenomenon), but simply to causation by one phenomenon of *all other* phenomena – which is a quite consistent viewpoint. If "the universe" is understood in a fixed, narrow sense, of course it is absurd to seek for a cause of it beyond it. But if the term is taken as open to all comers, no difficulty arises. A term with similar properties is the term "Nature" – if we understand it rigidly, "miracles" are possible; but if we take it flexibly, the concept of something "supernatural" like that becomes at best merely conventional.

9 Of course, Nagarjuna would reject the proposition that God is eternal and at some time chose to create the world, since he does not admit of eternity.

It should be pointed out here that 'creation' does not simply mean causality by God of (the rest of) the universe. The presumed type of causality involved is volition, a free act of will, rather than causation. Furthermore, God is not conceived as the direct cause of everything in the universe, but merely as First Cause and Prime Mover, i.e. as the cause of its initial contents and their initial movement, as well as of the 'laws of nature' governing them. This might be taken to mean, in a modern perspective, the core matter subject to the Big Bang, the ignition of that explosion and the programming of the evolution of nature thereafter, including appearance of elementary particles, atoms of increasing complexity, stars and planets, molecules, living cells, evolution of life forms, organisms with consciousness and will, and so forth (creationism need not be considered tied to a literal Biblical scenario).

Once God has willed (i.e. created) inchoate nature, it continues on its course in accordance with causation, with perhaps room for spontaneous events (as quantum mechanics suggests) and for localized acts of volition (by people, and perhaps higher animals, when they appear on the scene). As already mentioned, there are degrees of causation; and when something causes some second thing that in turn causes some third thing, it does not follow that the first thing is a cause of the third, and even in cases where it is (thus indirectly) a cause, the degree of causation involved may be diminished in comparison with the preceding link in the chain (dampening). Similarly with volition, the cause of a cause may be a lesser cause or not a cause at all. It is therefore inaccurate to regard a First Cause, such as God is conceived to be relative to nature, as being 'cause of everything' lumped together irrespective of process. The succession of causal events and the varieties of causal relations involved, have to be taken into consideration.

Spontaneity of physical events and freedom of individual (human or animal) volition are not in logical conflict with creation, because they still occur in an existence context created by God. God may well be the indirect cause of spontaneous or individually willed events, in the sense of making them possible, without being their direct cause, in the sense of making them necessary or actualizing them. Furthermore, to affirm creation does not logically require that we regard, as did some Greek philosophers, God as thereafter *forced to* let Nature follow its set course unhindered. It is conceivable that He chooses not to interfere at all; but it is equally conceivable that He chooses to interfere punctually, occasionally changing the course of things (this would be what we call 'miracle', or more broadly 'providence'), or even at some future time arresting the world altogether. His being the world's initiator need not incapacitate Him thereafter from getting further involved.

All that I have just described is *conceivable*, i.e. a consistent theory of creation, but this does not mean that it is definitely *proven*, i.e. deductively self-evident or inductively the only acceptable vision of things in the context of all available empirical data. Note well that I am not trying to give unconditional support to religious dogmas of any sort. Rather, I am reacting to the pretensions of many so-called scientists today, who (based on very simplistic ideas of causality and causal logic) claim that they have definitely *disproved* creation, or who like Nagarjuna claim that it is logically *not even thinkable*. Such dogmas are not genuine philosophy. One should never let oneself be intimidated by either priestly or academic prestige, but always remain open-minded and consider facts and arguments impartially and fairly.

Alternatively, Nagarjuna could be supposed to discuss in his second thesis *whether God was created by something else*. In that case, I would agree with his rejection of the idea. We could claim that God is uncreated, on the ground that we have conceived God as an explanation of the world appearing before us, and cannot go on looking for an explanation of the explanation and so on, *ad infinitum*. This position can however be legitimately contested, on the ground that if we demand one explanation, consistency requires that we demand an infinite regression of them. So we are in a quandary, faced with either a lack of explanation or an overdose of explanations, neither of which is logically satisfying.

We might oppose an atheist conclusion by arguing that if we consider it acceptable to offer no explanation for the world, then we could equally well be allowed to offer none for God. However, there is a difference between these two positions, in that the world is empirically evident before us, whereas God is not[10]; furthermore, explanations

[10] The theory that God exists counts the existence of the world as empirical evidence for itself, since that is what the theory is constructed to explain. But this confirming evidence is *not exclusive* to that theory, since it is also claimed by

are meant to simplify problems, whereas the assumption of God introduces new and more complex questions compared to the assumption of a world without God.
In conclusion, the ideas of God and creation are certainly full of difficulties, as Nagarjuna asserts (though for the wrong reasons), but altogether abandoning them also leaves us with difficulties, which Nagarjuna does not consider. The currently most rational position is probably an agnosticism leaning towards atheism. This does not preclude a personal leap of faith, based not on reason but on more emotional grounds – that is precisely what we mean by 'faith'[11]. It is interesting to note, concerning Buddhism, that "when someone asked Buddha the question whether the world was made by God, he did not answer"[12].

Cheng tells us that "the true Madhyamika approach" is "neither theistic nor atheistic", but merely that God "cannot be *conceived* of as existing". Nagarjuna does not really infer from the latter (though at times he seems to) that God does not exist, because "only a significant statement can be significantly negated or contradicted". Thus, even agnosticism is rejected by him, since it considers the issue meaningful. Clearly, I am disagreeing, and maintaining that God is (somewhat) conceivable, but is neither provable nor disprovable; i.e. a reasonably intelligible and consistent theological theory can be formulated, but it remains speculative as we have no way to verify or falsify it.

(c) Other issues raised by Nagarjuna include the following:

- **He asks who in turn created God, and who in turn created that creator of the creator, ad infinitum?** This is of course a serious logical issue, legitimately raised. We have already addressed it, without claiming to have finally resolved it. The important counter-argument to note here is that atheism, too, leaves an unanswered question: how come existence exists?[13]
- **Nagarjuna asks in what place God was staying when he created the world, and in what place he put the world he created, and whether he or another created those places; and he claims that such considerations give rise to infinite regress of creations and creators.** This query is also legitimate, but more easily opposed. One might hypothesize that God takes up no space and created space as well as its contents. One might add the more modern view, that space is not independent of matter, nor 'occupied' by it, but a relation between material items. It is also interesting to note that modern physics postulates certain basic constituents of matter as without spatial extension.
- **He asks why, if God (as we conceive Him) is omnipotent and omniscient, and so unhindered by obstacles, He did not create the world "in its totality at one and the same time".** To me this question does not seem very unsettling – we can just answer, why not? I mean, if God had done so, Nagarjuna would be asking: why not create a world of process?[14]
- He should rather have asked why, if God (as we conceive Him) is complete and self-sufficient, and so lacking nothing and so desiring nothing, He created the world at all. What might possibly have been His motive? That is a $64,000 question, for which no answer is forthcoming from anyone! **Nagarjuna perhaps senses this question, when he argues that "God wanted to create all creatures" implies antecedent "causal conditions", i.e. that "all things were produced from *karma*".** But it must be pointed out that if creation is an act of volition, it might well be without motive, and even if it has a motive such motive would be an influence but not a deterministic cause. There is no inconsistency in regarding free will as occasionally motiveless, or when motivated as unforced by its motives. That is precisely what distinguishes volition from mechanical action: it remains free and the responsibility of the Agent irrespective of all surrounding circumstances.

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contrary theories. This standoff could only be resolved, deductively, if some inextricable inconsistencies were found in all but one theory; or inductively, if some empirical detail were found which is explicable by one theory *and not by the others*.

[11] Even Buddhism calls on its adherents to have faith – faith enough to pursue enlightenment by meditation or whatever practices, till they get there and see its truth directly for themselves.

[12] Cheng, p. 93.

[13] See Appendix 1: fallacy I.

[14] See Appendix 1: fallacy I.

- **Nagarjuna also brings up "the problem of evil" (what we today call theodicy, i.e. the justice of God): if God (as we conceive Him) is omnipotent, omniscient and infinitely good, just and compassionate, why does He let "moral evil and physical suffering" exist in the world? "Evil men enjoy happiness and… good men suffer" and yet God will not or cannot prevent it. "If God cannot prevent evil he is not omnipotent, and if he can but will not, he is not all good." Thus, at least two of the attributes we assign to Him, omnipotence and perfect goodness, are mutually contradictory, given that "obviously, there is evil in the world" (and being omniscient, He must be aware of it). Therefore, God is either "not omnipotent" or "not all good" (or both), which in either case would mean a lack of the attributes we conceive him as having to have to be God, so that "he is not God" and "God cannot be conceived to exist".**

  This is of course a big issue for theists to face, and Nagarjuna's reasoning here is generally valid. However, the problem is not logically insurmountable and Nagarjuna's conclusion is too quick and radical. For we can suppose that God has a more complex accounting process in mind (regarding reward and punishment, tit for tat), or that He has instituted a system of trials for our ultimate greater good. What we view as inexcusable suffering of innocents, may in God's view not be as serious as we think, because (as Buddhism itself ultimately suggests) suffering is superficial and illusory. We may even have volunteered to be born into this world of apparently unjust suffering, to fulfill some purpose for God. And so forth – the concepts involved are logically too vague and uncertain to allow us to draw a definite conclusion.

Before leaving this topic, I would like to make some comments regarding Buddhism in general. At its core, the Buddhist doctrine is not theistic, in the sense of believing in a creator, nor particularly anti-theistic, though effectively atheistic. However, having arisen in Indian culture, it adopted ideas of gods, in the sense of supermen or supernatural beings, who were however themselves still ultimately subject to the Four Noble Truths, i.e. though they were very high-minded and heavenly, due to their good karma, they too eventually had to find liberation from the karmic cycle or face a lesser rebirth. At a later stage, as Cheng says, "the Buddha was deified", not in the sense of being regarded as creator, but in the sense of having the other "main admirable characteristics of God or divine being" that we have listed above. Initially a saintly man, he was promoted by his disciples to the highest rank of godliness, above all the other gods just described, because no longer subject to ignorance and karma. He had, as it were, dissolved in the universal unity (reality, *nirvana*) underlying the world of multiplicity (illusion, *samsara*), and thus merged with what might be called God.

Another aspect to be mentioned is that of *idolatry*, i.e. the worship of statues representing gods. This practice was present in Indian culture when Buddhism arose, and in other Asian cultures when Buddhism later reached them. Buddhists soon adopted this practice too, making and worshipping statues of the Buddha, and later other presumed Buddhas, boddhisattvas and arhats (saints). For at least some Buddhist sects, prayer and offerings to such statues seems to be the main religious activity. It is very surprising that Buddhism did not from its inception firmly discard such polytheism and idol worship. One would have thought, considering the otherwise 'scientific' mindedness of core Buddhist doctrine, that it would have sharply criticized and inhibited such irrelevant and dubious tendencies. No doubt, the initial motive was tolerance, taking potential converts as they were and avoiding conflict; but this attitude effectively perpetuated primitive habits.[15]

[15] I have never seen idolatry even questioned in any Buddhist text, ancient or modern! But anyway my historical analysis is confirmed in Christmas Humphreys' *Buddhism* (Harmondsworth, Mx.: Penguin, 1955. Rev. ed.). He states: "As it gently flowed into country after country… [Buddhism] tended to adopt, or failed to contest the rival claims of, the indigenous beliefs, however crude. In this way the most divers and debased beliefs were added to the corpus of 'Buddhism', and embarrass the student to-day" (p. 12). Later, he writes: "Certainly within a hundred years of the death of Asoka… from a human being the Buddha had become a super-human being, and his spiritual Essence had entered a pantheon nearly as large as that of the Hinduism from which it largely derived" (pp. 48-49).

> But it ought to be emphasized that the worship of carvings of Buddhas is *in direct logical contradiction* with the 'nothing has a self' doctrine of Buddhism, since it involves *a mental projection of selfhood into statues*. The fact is that, *in the idol worshipper's mind*, the figure he calls to and bows to is somehow a part of or an emanation of or a conduit to the transcendent deity, and so possessed of a (derivative) 'soul'. Thus, idolatry *perpetuates* one of the main psychological errors of people, according to Buddhism. If it is ignorance to assign soul to a living being, which at least seems to have consciousness, emotion and volition, how much more foolish it is to assign it to stone (or paper or even, finally, mental) images! Ordinary Buddhists surely cannot hope to attain the ideal of Buddhism by such practices, which have exactly the opposite educational effect.

All this to say that, whereas the core Buddhist doctrine is not especially concerned with theological ideas or issues, but with promoting wise and loving attitudes and behavior patterns, tending to enlightenment and liberation, Buddhism in practice is, for most of its adherents still today, a theism of sorts.

It should moreover be stressed that the attack on Creation is a distraction. The main underlying problem of the beginning of things remains, even for non-theists. Physicists have to face it, and so do Buddhists. In the latter context, in the beginning is the "original ground" of Nirvana. Its nature and essence is stillness, quietness, peace, perfection and fulfillment. All of a sudden, it stirs and subdivides; then more and more, till it engages in a frenzy of motion and distinctions. Samsara is born and proceeds. Since then, according to Buddhism, existence is suffering; and the meaning of all our lives is to intentionally return to the original mind state, by means of meditation and good deeds. So, what caused this madness? Was the original ground unstable or dissatisfied? Was it an incomprehensible "spontaneous" event or was it a stupid "act of will"? Buddhism does not really explain.

> Very similar notions are found in Judaism. Note first the ambivalence about Creation, which is presumed by Rabbinical commentators to be an 'act of love' by God for his creatures (on the principle that whatever God does has to be good), but at the same time is admitted as an act that gave rise (at least since the Garden of Eden incident) to empirically evident "evil" in the world. In particular, while procreation is prescribed so as to perpetuate life, the sex act is viewed as involving the "evil impulse". Note also the Jew's duty to work his/her way, through study, prayer and other good deeds (*mitzvoth*), towards – according to kabalistic interpretations – a renewed fusion with God (*teshuvah*). If we draw an analogy between the Jewish idea of God (one, unique, universal, infinite) and the less personalized Buddhist idea of Nirvana, we see the equivalence between the questions "why did God create the world?" and "why did Nirvana degenerate into Samsara?"

11. Self or soul

Nagarjuna, together with other Buddhists, denies the existence of a real "self" in man[1], i.e. that the "I" of each person is a soul or spiritual entity distinct from his physical body. This concept, referred to as the "*atman*", was regarded in Indian (Hindu) tradition as "the feeler of sensations, thinker of thoughts, and receiver of rewards and punishments for actions good and bad", something that "persists through physical changes, exists before birth and after death, and remains from one life to the other", something "constant and eternal" and "self-subsistent", which was ultimately "ontologically identical with *Brahman*, the essential reality underlying the universe" (i.e. God). The atman, or at least the ultimate Brahman essence of every atman, was considered as the most "real" of existents, because unlike the transient phenomena of experience, it was "permanent, unchanging and independent."

(a) Nagarjuna attacks this view, arguing that if to be "real" means to be "permanent, unchanging and independent", then the phenomena apparent to us would have to be regarded as "illusions", since they are transient, changing and dependent. It would follow that transience, change and dependence – being only manifested by phenomena – are also not "real". To Nagarjuna this seems "absurd", because "moral disciplines would lose their significance and spiritual effort would be in vain."

(b) Furthermore, he asks whether or not "changing phenomena", i.e. "our bodies or physical appearances", are "characteristics of the *atman*", and if so, what the relation between the atman and its characteristics might be, are they "identical" or "different"? If they were "identical", then atman would be subject to birth and death (and so forth) like the body, in contradiction to the definition of atman. If they are "different", then the atman "would be perceived without characteristics", which "it is not", because "nothing can be perceived without characteristics". On the other hand, if the atman is "without any characteristic", it would be "in principle, indefinable and hence inconceivable".

(c) Moreover, to the argument that "although the atman differs from the characteristics and cannot be perceived directly, its existence can be inferred", Nagarjuna replies that "inference and analogy are inapplicable in the case of knowing the *atman*" because they are only "applicable among directly perceivable phenomena". He therefore considers that "it is unintelligible to say that *atman* exists behind changing appearances."

Nagarjuna thus comes to the conclusion that "nothing has selfhood" and "*atman* is empty". This does not constitute a rejection on his part of a "conventional" idea of the self, as a mere "collection of different states or characteristics" such that "the self and characteristics are mutually dependent". This artificial construct of a self, being entirely identified with the perceivable phenomena we attribute to it, is not "permanent, unchanging and independent". Allow me now to debate the issues.

Let us start with **argument 11(a)**. I would agree with Nagarjuna here, that reality and illusion should not be defined as his predecessors do with reference to eternity, constancy and causal independence or their negations. As explained earlier, "reality" and "illusion" are epistemological judgments applied to "appearances". These two concepts arise first in relation to phenomena. Phenomena (perceived things) are considered, in practice and in theory, to be *prima facie* "real", and then demoted to the temporary status of "problematic" if contradictions are apparent between two of them, until either or both of these phenomena is/are dumped into the category of "illusion", on either deductive or inductive grounds. There is no concept of "reality" or "illusion" apart from appearance; they merely refer to subcategories of appearances.

At a later stage, these concepts are enlarged from perceptual appearances to conceptual and intuitive appearances. Both the latter appearances similarly have, as soon as and however vaguely they are conceived or intuited, an

[1] For this topic, see Cheng, pp. 74-76. He there refers to MT IX, XVIII:1a,1b,6, XXVII:4-8, and to HT II.

initial credibility, which we call the status of reality. But being less evident, more hypothetical, their effective status is closer to problematic, and they have to be immediately and repeatedly thereafter further defined, and tested for internal consistency, for consistency with empirical data, and by comparison to alternative theses. The answers to these questions determine the degree of probability we assign to concepts or intuitions. Eventually, if they are found contrary to experience, or inconsistent with themselves or a larger conceptual context, or less credible than their alternatives, they are relegated to the status of the illusory.

For us, then, all appearances are *equally* 'real' in the primary sense that it is a fact that they exist and are objects of consciousness[2]. Moreover, as earlier explained, with reference to inductive and deductive issues, pure percepts (concrete appearances, phenomena) are always 'real'; but concepts (abstract appearances), including the conceptual admixtures in percepts, may be regarded as *to various degrees* 'real' (or inversely, 'illusory').

This analysis of reality and illusion as ontological qualifications based on epistemological considerations, shows that there is no basis for Hindu philosophy's identification of them with eternity, constancy and causal independence or their negations. The latter seems to be a poetic drift, an expression of devotion to God: the presumed common ground of all selves is hailed as the only "real" thing, in contrast to which everything else is mere "illusion". "Real" in that context means significant to the world, worthy of attention and pursuit – it is a value judgment of another sort.

If we look to the epistemological status of *the concept of* God, we would say that it is conceivable to some degree; but not to an extreme degree, because there are considerable vagueness and uncertainty in it (see the previous topic of the present essay). An appeal to *revelation* is not a solution, because revelations to prophets are for the rest of us mere hearsay; and anyway different prophets have conflicting visions, so that even if we grant that they had the visions, we have to regard some (and therefore possibly all) of them as having misinterpreted their respective visions. Faith is always involved and required with reference to God. But even supposing God is admitted to exist, and that He is one[3], eternal, invariant and completely independent, it does not follow that this is a definition of reality. The universe, which evidently exists, is also still real, even if it is but a figment of God's imagination, even if it and all its constituents are transient, changing and dependent. A short-lived event may still be real; a flux may still have continuity, a caused event may still have occurred.

Thus, we may confidently agree with Nagarjuna's rejection of the Hindu definition of reality. We may, nevertheless, doubt *his argument* in favor of that rejection, namely that "no evil person could be transformed" if the phenomenal world were illusory in the Hindu sense. Even agreeing with him that people can morally improve, we have to consider that concepts of morality, or of good and evil, come much later in the development of knowledge than the concepts of reality and illusion, and so cannot logically be used to define or justify them. Furthermore, concepts of morality depend for their meaning on an assumption of volition operating in a world subject to time, change and causality; morality has no meaning in a world with only determinism or chance, or in a static multiplicity or unity.

Let us move on to **argument 11(b)**. The question asked here is what the relation between a soul and "its" body and other perceivable phenomena (such as imaginations and emotions) might be. In my view, and I think the view of many ordinary people and philosophers, the soul is a spiritual entity (i.e. one of some stuff other than that of the material body or of mental projections), who is at once the Subject of consciousness (i.e. the one who is cognizing phenomena and other appearances – i.e. the "feeler of sensations and thinker of thoughts" mentioned above) and the Agent of volition (i.e. the one who evaluates, who makes choices and decisions, who puts in motion acts of will, who has attitudes and tendencies, and who is within certain parameters free of determinism, though not unaffected by influences and motives – i.e. the "receiver of rewards and punishments for actions good and bad" mentioned above).

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2 Some might say, exist *as* objects of consciousness – but even that is existence.

3 This characteristic of God, one-ness, is not mentioned by Cheng, but philosophical Brahmanism is ultimately monotheistic, even though many Hindus are in practice polytheistic. It should be mentioned, however, that one-ness is not logically implied by eternity, invariance and independence; i.e. one could conceive two or more entities with these characteristics (certainly the first two, at least – independence would be open to debate). Perhaps Zoroastrianism is a case in point?

Thus, the relation of soul to other existents within the universe, according to this view, is that the soul is capable (as Subject) of cognizing to some extent concrete and abstract appearances, and (as Agent) of interfering to some extent in the course of natural events, influenced and motivated by them through his cognition of them, but still free to impose his will on some of them. To affirm powers of cognition and will to the soul does not, note well, imply such powers to be unlimited or invariable; one may be free to act within certain parameters and these parameters may under various circumstances widen or narrow in scope. By 'influence', I mean that the events external to the soul may *facilitate* or *make more difficult* its actions, to degrees below 100% (such extreme degree being the limiting case of deterministic causality, i.e. causation). This view leaves open the issue as to whether the soul is of limited duration (i.e. bounded by the lifetime of the body, which it would be if it is an epiphenomenon of matter clustered in living cells and the complex organisms they compose), or eternal (which it would be if it is a spark of God).

Returning now to Nagarjuna's argument, we would say that soul is not "identical" with its perceptible "characteristics". The soul may inhabit or be an epiphenomenon of the body, but is in either case something other than the body. The soul perceives and conceives the body (including visceral sentiments) and matter beyond it and mental phenomena within it (i.e. imaginations), through sensory and brain processes, but these processes are not identical with its cognition of their results. The soul acts on the body (or at least, the brain), and through it on the matter beyond it and on the projection of mental images, but this action (that we call will, a power of spirit over matter[4]) is a special sort of causality neither the same as mechanical causation nor mere happenstance. The "characteristics" of the soul are thus merely perceptible *manifestations* (sensations, movements, emotions) of deeper events (consciousness, will) occurring *at the interface of* matter and spirit and more deeply still *within* spirit.

This theory of the soul differs from the Indian, in that it does not imply that the soul is imperishable or that it does not undergo internal changes or that it is entirely causally independent. Nor does it imply that the soul is separable (though distinguishable) from the body, existing before or after or without its biological activity, in the way of a disembodied ghost. So Nagarjuna's criticism that birth and death are contradictory to a concept of soul is irrelevant to this theory; for his criticism only applies to the specific Indian definition of "atman". But even if the soul is granted to be eternal, I do not think Nagarjuna's criticism is valid; for even an eternal spiritual entity may conceivably have momentary effects – as in the case of God, as we conceive Him, creating or interfering in the world. Note that we commonly regard the human soul, too, as acting on (the rest of) the natural world, without considering it necessarily eternal.

With regard to the second alternative of Nagarjuna's argument, considering the possibility that soul be "different" from its perceivable "characteristics", our reply would be, not only that they are distinct (though related as cause and effect, remember), but that we need not accept his claim that the soul's imperceptibility implies it to be "inconceivable" and "indefinable". We agree that the soul cannot be perceived, i.e. does not itself display perceptible qualities, i.e. is not a phenomenon with sense-modalities like shape and color, sound, smell, taste or touch aspects. But we may nevertheless to a considerable extent conceive and define it. The proof is that we have just done so, above; furthermore, if Nagarjuna did not have a concept and definition, however vague and open to doubt, of soul to work with, he would have been unable to discuss the issue at all. There is no epistemological principle that the imperceptible is inconceivable and indefinable; if there were, no concept or definition would be admissible, not even those that Nagarjuna himself uses, not even those involved in the statement of that alleged principle. Concepts are precisely tools for going beyond perception. Complex concepts are not mere summaries of percepts, but imaginative departures from and additions to perceptual knowledge, nevertheless bound to the latter by logical and adductive rules. Even simple concepts, purporting to be summaries, are in fact regulated by these same rules.

Which brings us to **argument 11(c)**. Here, Nagarjuna contends that inferences and analogies from experience may be valid in specific cases, but not in the case of soul. He claims that we can for example infer fire indirectly from

[4] Granting the universality of law of conservation of energy, we would have to presume that spirit's will somehow releases energy locked in matter, rather than inputting new energy into it. Perhaps volition affects the wave-form of energy without affecting its magnitude.

smoke, because we have previously seen fire directly in conjunction with smoke, whereas in the case of soul, we have never perceived it so we cannot infer it from perceptible "characteristics". We can reply that, though fire and smoke provide a valid example of inference, this is a selective example. Many other examples can be brought to bear, where we infer something never perceived from something perceived. For example, no one has ever directly sensed a magnetic 'field of force', but if you hold two magnets opposite each other, you feel the pull or push between them; you can also see a nail moving while a magnet is held close to it without touching it. The concept of force or field is constructed in relation to an experience, but is not itself an object of experience.

Nagarjuna's discourse is itself replete with such 'indirect' concepts. For instance, consciousness is imperceptible, perception is imperceptible, and so on. One of his favorites, namely "emptiness", is *per se* without perceptible qualities. So he is using a double standard when he denies such concepts, in support of his denial that soul is intelligible. Such concepts are constructed by imaginative analogy (e.g. I may draw a magnetic force as a line or arrow) and by verbal definitions and descriptions (using words referring to relations first conceived with reference to empirical events – for instance, "whatever *causes* this motion, call it a force" or "force equals mass times acceleration caused"). Such creative construction is merely a first stage; it does not in itself validate a concept. The proposed concept must thereafter be tested and tested again, with reference to the totality of other empirical knowledge and theory, before it can be considered as valid. Its validity is also a function of its utility, i.e. the extent to which it helps us to better understand and order our experience of the world.

I personally do not regard that the concept of soul can be entirely based on such construction from experience. It seems evident to me that consciousness implies someone who is being conscious, a Subject-soul, as well as something one is conscious of, an Object. But I am sensitive to the objections by many philosophers, including Buddhist ones, that this thought may just be a prejudice incited by grammatical habit. And, as already admitted, if one introspects and looks for phenomenal manifestations of a self being aware, one finds none. Some, including Nagarjuna, would say that the concept of consciousness is itself in doubt, that all one can empirically claim is appearance. As for the concept of volition, let alone that of soul as the Agent of will, many doubt or deny it, in view of the difficulties in its definition and proof.

But I think it is very important to realize that all Buddhist accounts (at least all those I have encountered) of ***how an illusion of selfhood might conceivably be constructed by a non-person*** fail to avoid begging the question. A theory is required, which answers all possible questions, before such a revolutionary idea as that of denial of *real* self in man can be posited with confidence; and no theory without holes or inconsistencies has to my knowledge been proposed. We may readily admit the existence of an *illusory* self (or 'ego'), constructed and suffered by a stupid or misguided real self. But an aberration or delusion with no one constructing it or subject to it, seems like an absurd concept to me. It implies mere happenstance, determinism, without any consciousness, volition, values or responsibility.

Indeed, if you examine attempted such theories they always (overtly or covertly) describe an effective person (the pronoun 'he') constructing a false self. They never manage to escape from the sentence structure with a personal subject; typically: 'he gradually deludes himself into thinking he has a self'. They do not provide a credibly detailed and consistent scenario of how unconscious and impersonal elements and processes (Nagarjuna's "characteristics") could possibly aggregate into something that has the impression (however false) it is someone! A machine (or robot with artificial intelligence) may 'detect' things (for us) but it has no consciousness; it may 'do' things (for us) but it has no volition; it may loudly proclaim 'I' but it has no soul.

There is also to consider the reverse process of *de*construction, how an ultimately impersonal artificial self (non-self) would or could go about freeing itself from illusion. Why would a non-self have any problem with remaining deluded (assuming it could be), and how if it has no personal powers would it intelligently choose to put in motion the prescribed process of liberation from delusion. A simple sentence like 'to realize you have no self, make an effort to meditate daily' is already a contradiction in terms, in my view.

12. Self-knowledge

Let us therefore consider how we might argue in favor of a soul, consisting of a Subject and his consciousness and an Agent and his will. If I do not mention feelings much here, it is only because I consider them derivatives of the other two powers of the soul; but the soul as author of evaluations (value-judgments, choices, affections) is intended here too.

As already stated, I agree that the soul has *in itself* no perceptible (i.e. visual, auditory, olfactory, gustatory or tactile) qualities, comparable to those in or around the 'body' (matter) or in mental projections (imaginations, dreams). This can be taken to simply mean that it is not made of material or mental substance, granting that "matter" (in a large sense, here, including physical and imaginary concrete phenomena) is whatever has these qualities; for this reason, let us say that soul is made of some distinctive substance, call it spirit.[1] All we have done here is hypothesized, by analogy to the phenomenal realm, an entity (soul) of different stuff (spirit); this is logically legitimate, provided we go on and justify it further.

This concept of a soul is constructed to explain certain phenomena, on the basis of a mass of observations and theory-building. The soul is posited as the Subject of consciousness (or cognition) of, first, concrete phenomena (percepts) and, second, abstract appearances (concepts); and at a later stage as the Agent of will, the presumed *cause* (in a special sense) of certain perceptible actions of bodily organs (eye movements, speech, motions of arms and legs, and so on) as well as of intellectual organs (imagination, attention, thought processes, and so on). But if soul is reduced to such a conceptual construct, we only succeed at best in giving a *general* description of its powers and activities.

Such a theoretical approach leaves us without justification for our day-to-day propositions concerning *our own particular* thoughts and deeds at any given time. For conception cannot proceed from a single event; it is the outcome of *comparisons and contrasts* between two or more events. Whereas, statements about an individual person's present situation are not made in comparison and contrast to other persons or situations. A general proposition can serve as major premise of a syllogism, but to obtain a particular conclusion, we need a particular minor premise. Indeed, to obtain the general proposition in the first place, we need to admit some particular cases of the same kind, which we can then generalize and apply to other particular cases (that is what syllogistic inference is all about).

That is, when we say, for instances, "I believe so and so" or "I choose so and so" or "I wish so and so", we are evidently not referring to phenomena *perceptible at the moment* (belief, choice, wishing have no immediate concrete manifestations, though they may eventually have perceptible effects), and we are evidently not *conceptually inferring* such propositions from any perceptual phenomena (i.e. what these propositions refer to are not abstract appearances). Yet these propositions are significant to each of us, and can fairly be declared true or false by us. Their truth or falsehood is, to repeat, not exclusively based on experience and on rational considerations, as Buddhists suggest, but is *immediately, directly known* by introspection.

This is what I would call 'self-knowledge'; and since this type of cognition is neither perception nor conception, it deserves a special name – say, 'intuition'. My use of this term should not be taken to imply acceptance of knowledge of other people's souls, thoughts, wills or emotions (which is another issue, open to debate, solipsism not being excluded) – it is here restricted to self-intuition. I do not use the term 'introspection', because this may be used with reference to perceptible phenomena, such as one's mental imaginations or bodily feelings.

Thus, in this view, the soul is cognized by three types of cognition: directly by intuition, and indirectly by conceptualization based on the soul's perceptual effects *and* its intuited states and activities. Of course,

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[1] We can leave as an open issue, parenthetically, the possibility that matter and spirit are respectively coarse and fine manifestations of one and the same substance.

'cognition' is one and the same in all three cases; only *the object* of cognition differs in each case. If we limit our consideration only to perceptual effects and concepts derived from them, we can only construct a *theoretical* 'soul' and refer to '*powers*' of soul. To obtain and claim knowledge of an *individual* soul and of its *actual* perceptions, conceptions, beliefs, intentions, acts of will, value-judgments, affections, etc., we have to admit a direct cognition other than perception, namely 'intuition'.

Thus, we could refer to soul with several terms: the 'I' of my own intuitions, the 'self' when assuming that others have an 'I' like mine (on the basis of similar perceptible effects), and the 'soul' when referring to the conceptual construct based on my 'I', your 'I' and their perceptually evident (presumed) effects. Granting all this, it is no wonder that if we seek definition or proof of the 'I' in phenomenal effects, we will not find it!

Let us now return to these intuited propositions, for a moment. Consider this well. If I say to you "I believe (or disbelieve or am unsure about) so and so" – did I infer this from anything and can you deny me? Sure, I have to mean what I say to you, be sincere. Sometimes, too, I may *lie to myself*, and claim to believe something (e.g. some complimentary claim about myself, or some religious or political claim), when in fact I do not really believe it. The human psyche has its complexities, and we can hide and not admit things even to oneself. In such cases, the truth of the statement can be verified with reference to a larger context, checking if my feelings and actions are consistent with my claimed belief. But this does not mean that all such personal claims are known by reference to perceptible side-effects, as Buddhists claim. It only means that, just as in the perceptual and conceptual fields, appearances have an initial credibility but have to be faced off with other appearances, so in the field of intuition, an inductive process of verification goes on, through which some intuitions are found to be doubtful (due to their conflicts with other intuitions, and/or perceptible phenomena and conceptual considerations).

Furthermore, it should be stressed that not all statements of the form "I-verb-object" (object being optional) are based on intuition alone. Some have perceptual and/or conceptual basis only, or also. For example, "I am thinking that we should go there" involves perceptual factors, perhaps a mental image of our bodies (mine and yours) walking along in some direction, as well as conceptual factors, perhaps a reasoning process as to why we should go there. But some such statements are purely intuitive, e.g. "I believe so and so" is final and independent, whatever the reasoning that led up to the belief. Furthermore, such statements need not be verbalized. The words "I", "believe" etc. involved in the statement are of course products of conceptualization; but the intent of the sentence as a whole is a particular intuition, which the words verbalize.

Also to note well is that a proposition like "I believe so and so" cannot be based on a coded message from the brain, to the effect that "so and so should be declared as 'your belief' at this time", for the simple reason that we have no awareness of any *perceptible* message of this sort. Therefore, such a statement is not a translation in words of a special kind of percept (just as conceptual statements are not). Perhaps the statement "I believe so and so" *itself* is the perceptible message from the brain? If so, we would be justified in denying any intuition of soul and its states and activities. But it is evident from introspection that we know what we want to say before we put it in words. The words merely verbalize an object already cognized; and this cognition must be 'intuition', since it is neither perception (having no perceptible qualities) nor conception (since it is particular).

It seems justified, in conclusion, to hypothesize, in addition to perception and conception, a third source of knowledge, called intuition, a direct cognition whose objects are the self (I) and its actual cognitions (I *know* what I am seeing, hearing, imagining, thinking, etc., right now), volitions (I *know* what I choose, decide, want, intend, will, etc., at this moment) and affections (I *know* what I like or dislike or am indifferent to, what I hope or fear, etc., at this time). I *know* these most intimate of things – who can tell me otherwise, how would they know better than me what the imperceptible contents of my consciousness are? Soul and its presumed powers – cognition, volition, affection – cannot be conceived by comparison, since I do not see any souls other than my own; it can only be conceived by inference from perceptible and intuitive phenomena that we hypothesize to be its effects. The objects of intuition may be "empty" of perceptible qualities; but they may still have an existence of sorts, just as abstracts are not themselves perceptible but may credibly be affirmed.

Suppose, for example, I meditate, watching my breath; my random thoughts cause my attention to stray for awhile[2]; I drag my attention back to the object of my meditation, my breath. Here, *the direction and intensity of my attention* require an act of will. The straying away of attention from the breath is *not* my will; *my* will is what makes it return to the breath. Phenomenally, the attention on the breath and the loss of this attention (or rather the breath phenomenon and the lack of it) are on an equal plane. What allows me to regard the one as mine and the other as not mine, is the awareness that I had to make *an effort* in the one case and that no effort[3] was involved in the other case. This 'effort' is the intuited volition and that it is 'mine' signals intuition of soul. I may focus on the effort alone, or by an additional act of will focus on the fact that it is mine. There is no 'reflexive act' involved in this self-consciousness, because it is one part of me watched by the rest of me.

Of course, this is all very mysterious. When we say "I think this" or "I will that", we have no idea where this or that event came from or how it popped up. Certainly the deep source and manufacture of a thought or will of the soul is unknown to us, so we cannot claim to wholly own it. We do not have a plan of action before the thought or will, through which we consciously construct the latter. Each thought or will, finally, just is. There are no steps or stages, we just do it. But it is still not just happenstance; there is an author, ourselves. We are able to distinguish, in most cases, between thoughts or wills that just 'happen to us', and others that 'we author'; we may even identify them as voluntary or involuntary to various degrees.

All this to say that Nagarjuna's critique of soul and its powers, and of the knowability of these things, is far from conclusive. Buddhists are justified in doubting and inquiring into the issues, but from a purely philosophical point of view the Madhyamika conclusion of "emptiness" may be considered too radical and extreme. It may be obviously valid from the perspective of someone who has reached some higher form of consciousness (which, *I know*, *I* have not), but their *rational* arguments are not decisive. Most important, as we have seen, Nagarjuna bases his denial on *one particular* theory of soul (the atman theory), and has not considered all conceivable theories. To rebut (or more precisely, to put in doubt) his arguments, it is therefore sufficient to propose one alternative theory (as above done) that he has ignored; the alternative does not need to be proved – if it is just conceivable (coherent, consistent), that is enough.

Nagarjuna does not, in my view, satisfactorily answer questions like 'who is it that perceives, thinks, desires or acts?', 'who is it that meditates in pursuit of liberation or eventually reaches it?', when he explains away the soul as a mere cluster of percepts or concepts, as something (illegitimately) inferred from perceptible phenomena by a presumed cause-effect relation.

In passing, it is worth noting that, although the doctrine of no-self is fundamental to Buddhism, not all Buddhists have interpreted it as a total rejection of soul (in some sense of the term). One Theravada school, known as the 'Personalists', dating back to about 300 BCE, whose adepts in the 7th century CE included almost one third of all Buddhist monks in India, "motivated by commonsense, maintained that in addition to impersonal events, there is still a 'person' to be reckoned with."[4] According to the *Abhidharmakosha*, a Mahayana work by Vasubhandu (4th century CE), the Personalists interpreted the no-self doctrine of the Buddha as signifying simply that "something which is not the true Self is mistaken for the true Self".

It is thus possible to understand the doctrine of not-self as a rejection, not of 'soul' ('real or deep self'), but rather of 'ego' ('conventional or superficial self'). The ego is a confused construct of 'selfhood' by the soul, due to the latter's *self-identification with* delusive opinions (acquired by itself and through social influences), and consequently with certain attitudes and actions it engages in, in the way of a self-protective reaction. By predefining itself and its world, the soul imprisons itself in patterns of response appropriate to that definition. It is up to the soul to rid itself of the ego-centered viewpoint, by realizing the stupidity and avoidability of it.

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[2] As we meditate, countless thoughts pop up, tempting us to follow them. Eventually, one manages to hook us, grabbing our interest and hurtling us through a series of associations. Thus totally absorbed, we forget our object of meditation for a while, until we realize we have been distracted.

[3] The thoughts I strayed into may have involved voluntary processes, but my straying into them was involuntary.

[4] According to Edward Conze, in *Buddhist Scriptures* (Penguin: England, 1959). See pp. 190 and 192-7.

Afterword: Not 'empty logic', but empty *of* logic

I shall stop here, save for some concluding remarks, though a lot more could be said. As we have seen, Nagarjuna is motivated by very good intentions: he wishes to help us achieve enlightenment or liberation, by freeing us from all obstacles to cognition of the "emptiness" underlying the phenomenal and conceptual world. For him, the principal obstacle is Reason: as he says, "if conceptualizations are permitted there will arise many, as well as great, errors"[1]. His strategy is therefore to invalidate for us our every logical tool.

From a *practical* point of view, we might well agree with and congratulate Nagarjuna. When one is engaged in meditation, it is appropriate to stop all thought, or at least to dissociate oneself from all imaginative and rational processes till they stop by themselves. One may also make one's whole life a meditative process, and legitimately choose to altogether abstain from rumination and cogitation. There is no doubt in my mind that in such context thought is useless, and indeed a hindrance to progress, apart perhaps from some initial theoretical studies and reflections to put oneself on the right track, as well as a minimum of ongoing thought to deal with routine aspects of survival.

But that is not what is at issue, here. Our concern in this paper is with Nagarjuna's *theoretical* discourse, his philosophical theses and claims to 'logic'. We may well doubt these, in view of the underhanded means he is willing to use to achieve his ends, including ignoring, eclipsing or distorting relevant facts, diverting attention from controversies or lying outright, begging the questions (circular arguments), stealing concepts (using them even while undercutting them), contradicting himself, manipulating readers in every which way. However noble his motives may be, they cannot justify such methods of discourse.

One may legitimately ask whether Nagarjuna's "Middle Way" corresponds to the Buddha's original concept with the same name. The Buddha's teaching is a practical one, eschewing the behavioral extremes, the fanaticism and asceticism, that religious desperation and enthusiasm tend to generate. Nagarjuna's is not a teaching of equal moderation in theoretical issues, but an extremist position, one I would characterize as nihilistic. This has been made evident again and again in the above exposition.

When I picked up the book *Empty Logic*, earlier this year in Bangkok's Khaosan Road, I was eager to learn more about Buddhism, and in particular about Nagarjuna and his Madhyamika school (having read many positive appraisals of them in other books, and some quotations). As a logician, I was especially pleased at the prospect that there might be a 'logic of emptiness', perhaps forms of reasoning still undiscovered in the West. Unfortunately, thanks to Cheng's very competent presentation, I soon discovered that Nagarjuna work contains no new field of logic, but is basically empty of logic, a ferocious mauling of logic. What a disappointment!

Please note well that I have nowhere tried to deny[2] Buddhism's thesis that ultimate reality cannot be accessed through rational means, but only through some fundamental change of cognitive paradigm. I nowhere claim to know what "emptiness" *is*, only what it *is not*. I remain open to such an idea, though I cannot claim to have achieved such deep levels of meditation that I can confirm it firsthand. I expected Nagarjuna to help me break through to such higher knowledge, not by attempting to destroy my lower knowledge but by proposing some evolutionary process.

Just as conceptual knowledge complements and improves on perceptual knowledge, without dismissing all perception, so may we expect meditative knowledge to correct the errors of and enlarge what came before it, without ignoring and belying all conception. I would not resist a fundamental rejection of logic, if some convincing means were used to this end; it is not attachment which prevents me. The way offered by Nagarjuna is

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1 Cheng, p. 37 – quoting MT XVII:12a.

2 To reject arguments offered in favor of a conclusion does not imply rejection of the conclusion concerned, since it might be reached by other arguments.

unconvincing to anyone with high standards of knowledge; it is merely a malicious parody of logic. What revolts me here is the shameless sophistry engaged in by Nagarjuna, in his impossible attempts to give logical legitimacy to his anti-logical ideas. (See **Appendix 1** for a list of fallacies he uses repeatedly.)

If someone sincerely believes that no words have true significance, would he write his skeptical words and expect others to understand them? If someone thinks or writes about motion, even to deny it, is he not thereby engaging in motion? If someone writes about causality, denying it so as to convince others to give up the idea, surely it shows that he himself believes in causality, in his ability to influence others and in their ability to choose a different cognitive path. Read his lips – if he did not believe in these things, why would he bother writing about anything? Like many Western skeptics, Nagarjuna does not take the trouble to harmonize his words and deeds, testing his thoughts on his own thinking; if knowingly indulged, this is hypocrisy. Like many religious apologists, Nagarjuna considers logic, not as a tool of research and discovery, but as a weapon of rhetoric in defense of preconceived ideas; if knowingly indulged, this is cheating.

It is legitimate to draw conclusions about someone on the basis of his arguments; this is not to be confused with *ad hominem* argumentation, which is judging the arguments with reference to the person making them. We might excuse Nagarjuna as a sloppy thinker, but it is evident that he has logical capabilities, so we must infer deceit. Occasional errors of logic are human – but such systematic misuse or selective use of logic is monstrous. He evidently takes people for fools, who will swallow whatever he dishes out. Worse still, he does not fear to intellectually incapacitate generations and generations of young people. Philosophy is a responsibility, like the medical profession. It should be an attempt to increase the mental health and efficacy of one's fellow humans, not a pastime for dilettantes or jokers or a cruel con game.

All this makes one wonder whether Nagarjuna himself achieved the supreme consciousness he attempts to guide us towards. If he is already enlightened, where are the honesty and sincerity, the realism and healthiness, the compassion and loving-kindness, one would expect from such consciousness? If he is not yet enlightened, how can he claim firsthand knowledge that abandoning logic is the way to such consciousness? In the latter case, he would have done better to stick to meditation, rather than speak out prematurely.

The overall result of his philosophical action (at least, those aspects of it we have encountered here) is, counterproductively, to cast doubt on Buddhism itself. For if one respected figure claiming, or being claimed, to have achieved enlightenment is uncertain to have done so, why not the others? But, as with all hearsay evidence on esoteric claims, Buddhists have to rely on faith, anyway. Also, fortunately, Buddhism is a lot richer, has much more going for it, than the few philosophical ideas and arguments treated in the present essay.

And presumably the same can be said for Nagarjuna (I have not read all his work). If we view his arguments as serious logical discourse, we are bound to condemn him as above done. But perhaps we should view it all more generously as a guru's tongue-in-cheek mimicry of logical discourse, intended purely as a *koan* for logically minded persons (like me) to mull over and go beyond. In that case, it is not the content of the discourse which counts for him, but its psychological effect. He wants us to 'die' of laughter.

Avi Sion

The **Heart Sutra** states: *form is no other than emptiness, emptiness no other than form. Form is emptiness, emptiness is form. And the same is true for sensation, perception, conception and consciousness*.

Hakuin comments: "Striking aside waves to look for water when the waves *are* water! Forms don't hinder emptiness; emptiness is the tissue of form. Emptiness isn't destruction of form; form is the flesh of emptiness…

Form and emptiness are not-two. If you pass these strange apparitions without alarm, they self-destruct. Forms sensation perception conception are sparks in the eye."[3]

[3] *Zen Words for the Heart*, translated in by Norman Waddell (Shambhala: Boston, Mass., 1996). "The *Heart Sutra* was probably composed in India about 1500 years ago", which means a few hundred years after Nagarjuna. The commentary is by Hakuin Ekaku (1686-1768), a Japanese Zen master.

Appendices

1. Fallacies in Nagarjuna's work

The following are the main fallacies that I have found Nagarjuna committing in his philosophical treatment of "emptiness".

A. Fallacy of the Tetralemma.

This consists in treating the combinations "both A and non-A" (contradiction) and "neither A nor non-A" (inclusion of the middle) as formal possibilities. But these are in all cases (i.e. whatever "A" stands for) logically forbidden at the outset.

B. Fallacy of the Inconclusive Dilemma.

This consists in making a dilemma appear conclusive, when in fact one (or all) of its horns (major premises) is (or are) problematic rather than assertoric. Dilemmatic argument can be validated only when its major premises are all proper if-then statements, not when any of them is an "if – maybe-then" statement.

C. Fallacy of the Denial of One and All.

This consists in denying one theory about some issue, and making it seem as if one has thus denied all possible theories about it. The denial, to be thorough, must indeed consider all alternative theories before drawing such negative conclusion about the issue.

D. Fallacy of the Ungranted Premise.

This consists in taking for granted a premise which is not generally accepted and which has not been adequately supported, or indeed which is generally unaccepted or which has been convincingly refuted.

E. Fallacy of the Unclear Theory or Term.

This consists in glossing over relevant details or nuances, which make all the difference in the understanding of the term or theory concerned. A term or theory should be defined and made precise so far as possible in the context of knowledge concerned, so that relative propositions can be properly tested.

F. Fallacy of Equivocation.

This consists in using a single term in two (or more) different senses within one's thesis, so as to make it seem that what has been established in relation to one of the senses has been established in relation to the other(s). This is made possible by fuzziness in definition of terms.

G. Fallacy of the Concept Doubting Percept.

This consists in using a concept to put in doubt the very percept(s) which has (or have) given rise to it in the first place. The order of things, i.e. the genesis of the concept in knowledge, how it arises in relation to certain percepts, must always be acknowledged and respected.

H. Fallacy of the Inappropriate Fixation.

This consists in pretending that a term that has intrinsically variable meaning has fixed meaning. Notably, terms like "this", "here" or "now" are intrinsically variable, in that the same word is always used, even as the actual object, time or place referred to differs; such terms do not remain stuck to their referents once and for all.

I. Fallacy of the Double Standard.

This consists in being severe towards one's opponent's argument while being lenient with regard to one's own argument, although the two arguments are formally similar or have similar strengths and/or weaknesses.

2. Brief glossary of some basic concepts

Chögyam Trungpa (1940-1987), a modern philosopher of Tibetan Buddhism, popular in the West, wrote that Nagarjuna "much preferred to approach truth by taking the arguments of other philosophical schools on their own terms and logically reducing them *ad absurdum*, rather than himself offering any definitions of reality."[1] We have seen in the present essay that such claims to logic by Madhyamika philosophy are highly pretentious.

Of *Shunyata*, the same disciple of Nagarjuna has this to say: "we impose our preconceptions, our ideas, our version of things onto phenomena, instead of seeing things as they are. Once we are able to see through our veil of preconception, we realize that it is an unnecessary and confused way of attaching handles to experiences without considering whether the handles fit or not."[2] This view, that conceptualization imposes something artificial and distortive on direct perception, may seem superficially credible, but upon reflection it is based on confusions. There are two aspects involved.

The first aspect is *psychological* – the fact of distraction. It is evident during meditation that extraneous thoughts keep popping up against our will, like a sort of enervating background noise. The brain continuously offers the mind topics of conversation, spontaneously or by association. We may with effort ignore them, but eventually one may grab our attention and drag us through a long interlude of useless images and inner sounds, memories, anticipations, discourse and emotions. Such "thoughts" obstruct our attempts at concentration, although if we persevere in our meditation they dampen and eventually disappear. During ordinary observation or thinking, too, there is a similar interference of irrelevant reflections, which hinder cognitive efficiency and efficacy. But *it does not follow* that cognition is thereby incapacitated.

Another aspect of Trungpa's statement is *epistemological* – the fact of fallibility. Human thought is admittedly not automatically and always correct in its observations, conceptualizations, categorizations and verbalizations, predications and generalizations, argumentations and other rational processes in pursuit of knowledge. However, *it does not follow* that thought is automatically and always wrong! Indeed, one could not make such a generalization without thereby denying one's own skeptical claim; so one must admit some efficacy to rational cognition, including the ability to spot one's own errors.

What our study of Nagarjuna's arguments has clearly shown is that his rejection of human reason is not based on any profound understanding of the processes involved in it. Rather, *his* personal failure to carefully observe and reflect on the actual genesis in human knowledge of the concepts he criticizes made them seem arbitrary *to him*. But although we all often err in our thinking, and few of us take time or have the intelligence to analyze its founding concepts, it does not follow that these concepts are invalid and useless, and that they can or should be abandoned.

Let us here very briefly recall what we said about some of these basic concepts in the present work. The reader can then see clearly that these concepts are not "preconceptions" that throw a "veil" over the percepts they are based on, but merely attempts to summarize information, so that more and more of it can be taken into consideration in any judgment, be it verbal or not. They are not "unnecessary and confused… handles", applied without regard to whether they "fit or not", but legitimate tools of knowledge, which like all tools have to be properly used to do their job. Human knowledge is not built on a purely deductive model or by arbitrary imposition, as Trungpa's (and Nagarjuna's) skeptical statements imply, but is an inductive development from experience.

- **Motion, rest**. The *facts* of motion (in the broad sense of change) and rest (constancy) are given in experience, found both within present phenomena and in the comparison and contrast between present and remembered phenomena. The *concepts* of motion and rest are developed in opposition to each other, with reference to such experiences.
- **Entity, individual**. Comparing and contrasting our memories of successive moments in the stream of phenomena appearing before us, we observe that some aspects seem different and some seem the same. From such experiences (assuming 'memory' and 'time') we infer the existence of 'change' and the existence of

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1 *Cutting Through Spiritual Materialism*. Boston, Ma.: Shambhala, 1973. (P. 191.)

2 *Op. cit.* (P. 207)

'substrata' to change (or individual entities). The inference involved is adductive, i.e. hypothesis, logical prediction and continued confirmation in experience.

- **Essence, kind**. Comparing and contrasting two or more such entities, we observe that some seem to have certain characteristics in common and exclusively (statistical *sine qua non*). A characteristic apparently common to two or more phenomena (concretes) is called an abstraction, being a presumed unity (of measure) in plurality (of instances). When (or so long as) such an abstraction is found distinctive, it is called an essence (or essential characteristic) and it can be used for purposes of definition. Individuals with the same essence are said to belong to the same kind or class.
- **Naming, verbalization**. Phenomena are first referred to in discourse by pointing and saying 'this' (or 'here' or 'now' or the like) to include, and 'but not that' (or 'there' or 'then' or the like) to exclude. Entities and kinds, concepts derived from collections of similar and distinct phenomena, may be associated with (respectively proper or common) words for the purposes of memory and discourse. Verbalization need not be final, but may be adapted as required; i.e. what is included or excluded under a name is flexible, provided consistency is maintained.
- **Nature**. The nature (or identity) of some individual or kind is the sum of the (categorical or conditional) 'laws' exhibited by it, i.e. a generalization of the apparent regularities in its attributes and behaviors, subject to review and particularization if new appearances do not match the old. Attributes or behaviors which seem devoid of law in this sense are regarded as either personal events or happenstance.
- **Predication**. Predication may be particular or general, possible or necessary, categorical or conditional, inclusion or exclusion of one phenomenon or abstract appearance in some abstraction. This may mentally occur with or without words. In any case, predication is a tentative act, a proposition, subject to checks and balances suggested by inductive and deductive logic. It has no dogmatic finality, but is controlled with reference to experience and reason.
- **Causation**. This refers to certain regularities of relation between two or more phenomena or abstractions, say 'A' and 'B'. The most typical is constant conjunction between A and B, but the term is also applicable to negative cases (not-A and not-B, A and not-B, not-A and B). There are also many degrees of causation, according to the number of factors involved. Causation is thus a statistical concept, intended to record and communicate certain observations. It is one of a larger constellation of causal concepts, including volition and influence, as well as spontaneity or chance.
- **Self, soul**. The Subject of consciousness and Agent of will, presumed to inhabit humans (and other entities, like higher animals or God). That this special core substance (spirit) is presumed (induced rather than deduced) does not necessarily mean that it is invented. To induce it we refer to phenomena experienced, conceptual considerations and possibly direct personal intuitions of self. Although no single item is definite proof of soul, a large number of indices may suggest its existence.

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	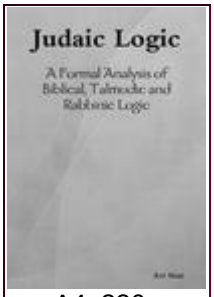	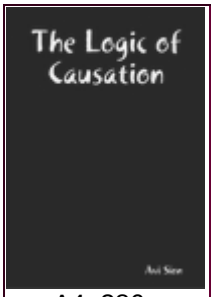	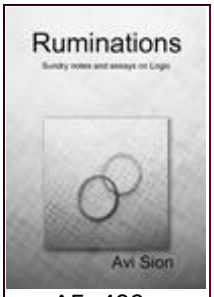	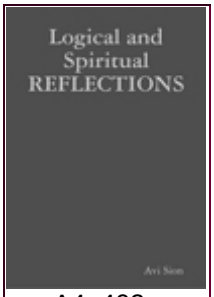
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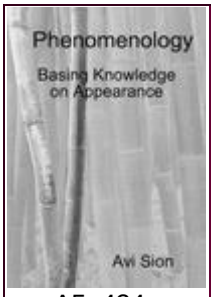	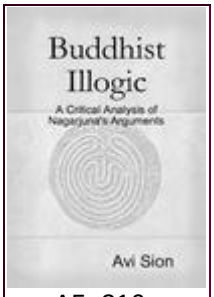		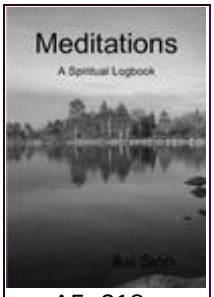	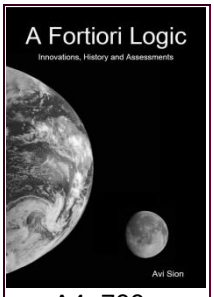
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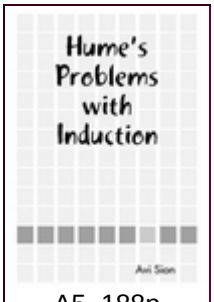	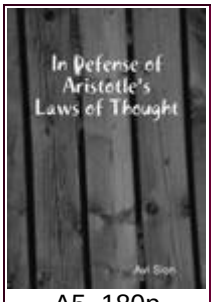		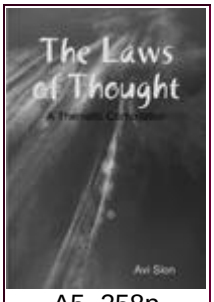	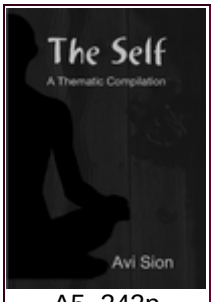
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	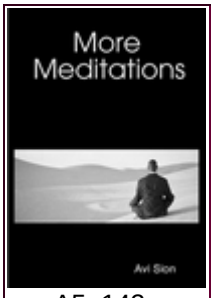	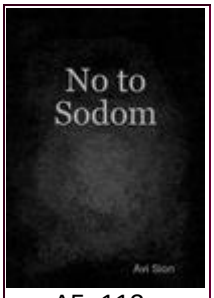	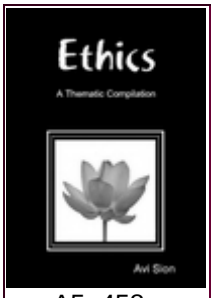	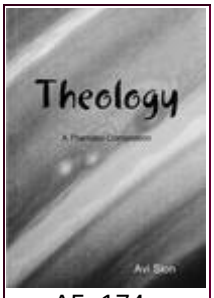
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