Logical and Spiritual
Reflections

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Abstract

Logical and Spiritual Reflections is a collection of six shorter philosophical works, in two parts.

The first part, consisting of **Logical Reflections**, includes:

- ***Hume's Problems with Induction***, which is intended to describe and refute some of the main doubts and objections David Hume raised with regard to inductive reasoning. It replaces the so-called problem of induction with a principle of induction. David Hume's notorious skepticism was based on errors of observation and reasoning, with regard to induction, causation, necessity, the self and freewill. These are here pointed out and critically analyzed in detail – and more accurate and logical theories are proposed. This work also includes refutations of Hempel's and Goodman's alleged paradoxes of induction.
- ***A Short Critique of Kant's Unreason***, which is a brief critical analysis of some of the salient epistemological and ontological ideas and theses in Immanuel Kant's famous Critique of Pure Reason. It shows that Kant was in no position to criticize reason, because he neither sufficiently understood its workings nor had the logical tools needed for the task. Kant's transcendental reality, his analytic-synthetic dichotomy, his views on experience and concept formation, and on the forms of sensibility (space and time) and understanding (his twelve categories), are here all subjected to rigorous logical evaluation and found deeply flawed – and more coherent theories are proposed in their stead.
- ***In Defense of Aristotle's Laws of Thought***, which addresses, from a phenomenological standpoint, numerous modern and Buddhist objections and misconceptions regarding the basic principles of Aristotelian logic. Many people seem to be attacking Aristotle's Laws of Thought nowadays, some coming from the West and some from the East. It is important to review and refute such ideas as they arise.

The second part, consisting of **Spiritual Reflections**, includes:

- ***More Meditations***, which is a sequel to the author's earlier work, *Meditations*. It proposes additional practical methods and theoretical insights relating to meditation and Buddhism. It also discusses certain often glossed over issues relating to Buddhism – notably, historicity, idolatry, messianism, importation to the West.
- ***Zen Judaism***, which is a frank reflection on the tensions between reason and faith in today's context of knowledge, and on the need to inject Zen-like meditation into Judaism. This work also treats some issues in ethics and theodicy.
- ***No to Sodom***, which is an essay against homosexuality, using biological, psychological, spiritual, ethical and political arguments.

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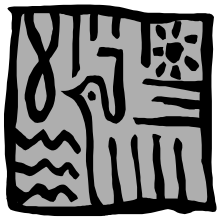
I. LOGICAL REFLECTIONS



"Come now, and let us reason together."

(Isaiah, 1:18)

Book 1. HUME'S PROBLEMS WITH INDUCTION

Hume's Problems with Induction is intended to describe and refute some of the main doubts and objections David Hume raised with regard to inductive reasoning.

It replaces the so-called problem of induction with a principle of induction.

David Hume's notorious skepticism was based on errors of observation and reasoning, with regard to induction, causation, necessity, the self and freewill.

These are here pointed out and critically analyzed in detail – and more accurate and logical theories are proposed.

The present work also includes refutations of Hempel's and Goodman's alleged paradoxes of induction.

1. Hume's "problem of induction"

In the present essay, I would like to make a number of comments regarding Hume's so-called problem of induction, or rather emphasize his many problems with induction. I am mindful of Hume in all my writings. In at least two places, I devote some attention to Hume's particular viewpoints[1]. If elsewhere I often do not mention him, or I just mention him in passing[2], as one proponent of this or that doctrine under discussion, it is because my emphasis is on proposing coherent theories rather than lingering on incoherent ones.

David Hume[3] is undoubtedly a challenging and influential philosopher. In his works, he repeatedly attacks many common concepts, such as the validity of induction (notably, generalization); the existence or knowability of natural necessity or law, causal connection or causation; and the existence or knowability of a self or person; that will is free of determinism and indeterminism; that an "ought" may be derived from an "is" or is a special kind of "is".

These are of course essentially various facets of one and the same assault against common sense, against human reason. I will briefly now reply to each of these skeptical objections. The central or root question here is, I believe, that of the validity of induction. For the other problems are solvable mostly by inductive means. So that if induction is invalid, it is indeed difficult to see how the various other basic ideas of reason could be justified.

With regard to Hume's problem with **generalization**: Hume[4] doubted the validity of generalization on the ground that *having in the past observed certain regularities is no guarantee that in the future such regularities will hold*. To appeal to a principle of Uniformity of Nature would, according to him, be a circular argument, since such a principle could only itself be known by generalization.

In Hume's view, a generalization is just a mental knee-jerk reaction by humans (and even animals, though they do it non-verbally), an expression of the expectation formed by repeated experiences of a similar kind, a sort of psychological instinct or habit rather than an epistemologically justifiable scientific methodology.

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1 Namely, in *Phenomenology*, chapter II (section 5), and in *Ruminations*, part I, chapter 8 (sections 4-7).

2 See mentions in: *Future Logic*, chapters 65 and 67. *Phenomenology*, ch. I, V, VI and VII. *Judaic Logic*, ch. 2. *Buddhist Illogic*, ch. 7. *The Logic of Causation*, ch. 3, 10, 16 and app. 1. *Volition and Allied Causal Concepts*, ch. 2. *Ruminations*, part I, ch. 9, and part II, ch. 1, 6, 7. *Meditations*, ch. 32.

3 Scotland, 1711-76.

4 In his *Treatise of Human Nature* (1739-40), and subsequent works. The *Treatise* is posted in full at http://socserv2.socsci.mcmaster.ca/~econ/ugcm/3ll3/hume/treatise1.html.

This might all seem credible, were we not to notice some glaring errors in Hume's understanding of generalization, and more broadly of induction[5].

Hume's error was to concentrate on the positive aspect of generalization and totally ignore the negative aspect of particularization.[6] Since he unconsciously equated inductive reasoning solely with generalization from past regularity, he naturally viewed the fact that some breach of regularity might indeed (as often happens) occur in the future as evidence that generalization *as such* is flawed. But this is just a misapprehension of the nature of induction on his part.

He should have known better, since Francis Bacon had (some 80 years before, in his *Novum Organon*)[7], already clarified the all-importance of the "negative instance" as a check and balance against excessive generalization and in other forms of induction. Because Hume failed to grasp this crucial insight, we can say that his understanding of induction was fragmentary and inadequate.

All generalization is conditional; we may infer a generality from similar particulars, *provided we have sought for and not found evidence to the contrary*. To generalize to "All X are Y" we need to know two things, not just one: (a) that some X are Y, and (b) that no X to date seem not to be Y. Though the latter condition is usually left tacit, it is absolutely essential[8].

If we did find such contrary evidence early, before we generalized, we would simply not generalize. If we find it later, after we generalized, we are then logically required to particularize. Synthetic generalities are not meant as static absolutes, but as *the best available assumptions in the given context of knowledge*. Generalization is a dynamic process, closely allied with particularization; it is not a once and for all time process.

The same logic applies to other forms of induction[9], notably **adduction**. The latter refers to a broader concept of induction, from any evidence to any derived hypothesis (which may contain different terms than the evidence). The hypothesis is not merely confirmed by the evidence it explains, *but equally by the absence of contrary evidence and by the absence of better alternative hypotheses*.

Note this well: the data that confirm a hypothesis do *not* suffice to make us believe it. The simple proof of this is that when a hypothesis is rejected for some reason, the data that in the past confirmed it *continue* to logically confirm it, yet the hypothesis is thrown out in spite of that. There are essential additional conditions, which make our inductive conclusion

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5 I here refer the reader to *Future Logic*, Part VI, for a fuller understanding of the issues. Read at least chapters 50 and 55.

6 This error has, I have read, already been spotted by Karl Popper.

7 England, 1561-1626. The full text (1620) is posted on the Internet at http://etext.library.adelaide.edu.au/b/bacon/francis/organon/complete.html.

8 Still today, many writers, philosophers and teachers fail to realize and mention this essential condition when they define or discuss generalization. It should nevermore be left tacit, to avoid the perpetuation of Hume's error.

9 Indeed, in the very act of concept formation, we do not merely *include* certain cases into it, but also (if only tacitly) *exclude* other cases from it. There is always both a positive and a negative aspect to thought, though the latter is often less manifest. Integration is always coupled with differentiation.

unassailable thus far, namely (to repeat) that we have to date no data that belies it and no more fitting hypothesis.[10]

Inductive truth is always frankly contextual. It is absurd to attack induction as "unreliable" because it does not yield truths as certain and foolproof as deduction is reputed to do. To argue thus is to claim that one has some standard of judgment other than (or over and above) the only one human beings can possibly have, which is induction.

When inductive logic tells us: "in the given context of knowledge, hypothesis X is your best bet, compared to hypotheses Y, Z, etc." – it is not leaving the matter open to an additional, more skeptical posture. For what is such **skepticism**, but itself just a claim to a logical insight and a material hypothesis?

If one examines skepticism towards induction, one sees it to be *nothing more than an attempted generalization from past occurrences of error (in other domains), one that pays no heed to past and present non-occurrences of error (in the domain under consideration)*. That is, it is itself a theory, open to inductive evaluation like any other.

Inductive logic has *already* taken that skeptical hypothesis into consideration and pronounced it inferior, because it does not duly take into consideration the specific current evidence in favor of X rather than all other alternatives.

Even if a scientific theory is not absolutely sure forevermore, we must stick by it if it seems at this time to be the closest to truth. The skeptic cannot come along and object that "closest is not close enough" – for that would mean he considers (nonsensically) that he has a theory that is closer than closest!

Hume foolishly ignored all this reasoning. He focused only on the positive aspect, and rightly complained that this could not possibly be regarded as logically final and binding! Under the circumstances, it is no wonder that he could see no "proof" of generalizing or adductive reasoning. If we wrongly define and fail to understand some process, it is bound to seem flawed to us.

When Hume discovered the unreliability of induction as he conceived it, he should have looked for a flaw in *his own view* of induction, and modified it, rather than consider induction as invalid. *That* would have been correct inductive behavior on his part. When one's theory leads to absurd consequences, our first reaction should be to modify our particular theory, not theorizing as such. Instead of doubting his own thinking, Hume attacked human knowledge in general, whining that it cannot be "proved".[11]

But of course, logic – by that I mean deductive logic this time – cannot tolerate such self-contradiction. If someone claims the human means to knowledge, which includes induction as well as deduction, is flawed, then that person must be asked how come he arrived at this supposedly flawless proposition. One cannot reasonably have one's cake and eat it too.

The argument against generalization is itself a generalization, and so self-contradictory. We cannot say: since *some* generalizations are evidently erroneous, therefore *all* generalization is

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[10] The logical calculus involved is thus not a simple dependence on "confirmation", but a much more complex and global set of considerations, including "non-rejection" and "competitiveness". See in this regard my detailed essay "Principles of Adduction" in *Phenomenology* (chapter VII, section 1).

[11] Hume's egotistical thinking in this and many other matters was very similar to that of certain philosophers much earlier in India (notably the Buddhist Nagarjuna). Not to mention Greek sophistries.

invalid (i.e. we cannot be sure of the validity of any generalization, which makes it as good as invalid) – because, of course, this argument is itself a generalization, and therefore is invalidated by itself! What we can say for sure is that a generalization (like that one) that leads to a contradiction is deductively invalid.

When one discovers a contradiction in one's thinking, it is not logic as such that is put in doubt but only one's current thinking. It is silly to cling to a particular thought and reject logic instead. Hume had greater faith in his particular logical notions (which were not, it turns out very logical) than he had in logic as such. The true scientist remains humble and open to correction.

Our ideas and theories have to be, as Karl Popper put it, *not only verifiable but also falsifiable*, to be credible and trustworthy. Albert Einstein likewise remarked[12]:

> "The belief in an external world independent of the perceiving subject is the basis of all natural science. Since, however, sense perception only gives information of this external world or of "physical reality" indirectly, we can only grasp the latter by speculative means. It follows from this that our notions of physical reality can never be final. We must always be ready to change these notions – that is to say, the axiomatic basis of physics – in order to do justice to perceived facts in the most perfect way logically."

If one examines Hume's actual discourse in his books, one sees that even as he explicitly denies the reliability of induction he is implicitly using induction to the best of his ability. That is, he appeals to facts and logic, he conceptualizes, generalizes and proposes theories, he compares his favored theories to other possible interpretations or explanations, he gives reasons (observations and arguments) for preferring his theories, and so forth. All that is – induction. Thus, the very methodology he rejects is the one he uses (albeit imperfectly) – and that is bound to be the case, for human beings have no other possible methodology.

To say this would seem to suggest that self-contradiction is feasible. Not so, if one considers how the two aspects, viz. the theory and the practice, may be at odds in the same person. When Hume says that induction is unreliable, he of course means that induction *as he sees it* is unreliable; but he does not realize that *he sees it incorrectly*[13], i.e. that a *quid pro quo* is involved. Indeed, he does not seemingly realize that the way he views it *affects* the way he gets his views of it, i.e. that he misleads himself too.

While he consciously denies the validity of induction, he unconsciously and subconsciously naturally continues to use it. However, because he has (prejudicially) chosen to deny induction in principle, he cannot study it as openly, impartially and thoroughly as he would otherwise have done, and he is led into error both in his understanding of it and in his actual use of it. Bad theory generates bad practice. And the converse is of course also true, wrong practices promote wrong theories. He is trapped in a vicious circle, which requires a special effort of objectivity to shake off.

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[12] I cannot say just where – having gleaned this quotation out of context somewhere in the Internet.

[13] Or at least, incompletely – being for instance aware of the positive side (e.g. apparent constancy), but unaware of the negative side (e.g. testing for inconstancy).

We must always keep in mind that what seems impossible or necessary to a philosopher (or anyone else, for that matter) depends on how he views things more broadly. Every philosopher functions within the framework of some basic beliefs and choices. These are not an eternal prison, but they take time and effort to overcome. Sooner or later, a philosopher gets locked-in by his past commitments, unless he takes great pains to remain open and inquisitive.

2. The principle of induction

Concerning the uniformity principle, which Hume denies, it is admittedly an idea difficult to uphold, in the sense that we cannot readily define uniformity or make a generality of it. We might speak of repetition, of two or more particular things seeming the same to us; but we are well aware that such regularity does not go on ad infinitum. On the contrary, we well know that sooner or later, something is bound to be different from the preceding things, since the world facing us is one of multiplicity.

Therefore, this "principle" may only be regarded as a heuristic idea, a rule of thumb, a broad but vague practical guideline to reasoning. It makes no specific claims in any given case. It just reminds us that there are (or seem to us to be) 'similarities' in this world of matter, mind and spirit. It is not intended to deny that there are also (apparent) 'dissimilarities'. It is obviously not a claim that all is one and the same, a denial of multiplicity and diversity (in the world of appearances, at least[14]). To speak of uniformity in Nature is not to imply uniformity of Nature.

We might also ask – can there be a world *without any* 'uniformities'? A world of universal difference, with no two things the same in any respect whatever is unthinkable. Why? Because to so characterize the world would itself be an appeal to uniformity. A uniformly non-uniform world is a contradiction in terms. Therefore, we must admit *some* uniformity to exist in the world. The world need not be uniform throughout, for the principle of uniformity to apply. It suffices that some uniformity occurs.

Given this degree of uniformity, however small, we logically can and must talk about generalization and particularization. There happens to be some 'uniformities'; therefore, we have to take them into consideration in our construction of knowledge. The principle of uniformity is thus not a wacky notion, as Hume seems to imply. It is just a first attempt by philosophers to explain induction; a first try, but certainly not the last. After that comes detailed formal treatment of the topic. This proceeds with reference to specifics, symbolized by X's and Y's, and to strict logic.

The uniformity principle is not a generalization of generalization; it is not a statement guilty of circularity, as some critics contend. So what is it? Simply this: ***when we come upon some uniformity in our experience or thought, we may readily assume that uniformity to continue onward until and unless we find some evidence or reason that sets a limit to it***. Why?

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[14] I.e. such recognition of pluralism does not at the outset exclude monism. The former may be true at the superficial phenomenological level, while the latter reigns at the metaphysical level of ultimate reality.

Because in such case the assumption of uniformity already has a basis, whereas the contrary assumption of difference has not or not yet been found to have any. The generalization has some justification; whereas the particularization has none at all, it is an arbitrary assertion.

It cannot be argued that we may equally assume the contrary assumption (i.e. the proposed particularization) on the basis that in past events of induction other contrary assumptions have turned out to be true (i.e. for which experiences or reasons have indeed been adduced) – for the simple reason that such a generalization from diverse past inductions is formally excluded by the fact that we know of many cases that have not been found worthy of particularization to date.

That is to say, if we have looked for something and not found it, it seems more reasonable to assume that it does not exist than to assume that it does nevertheless exist. Admittedly, in many cases, the facts later belie such assumption of continuity; but these cases are relatively few in comparison. The probability is on the side of caution.

In any event, such caution is not inflexible, since we do say "until and unless" some evidence or argument to the contrary is adduced. This cautious phrase "until and unless" is of course essential to understanding induction. It means: until *if ever* – i.e. it does not imply that the contrary will necessarily occur, and it does not exclude that it may well eventually occur. It is an expression of open-mindedness, of wholesome receptiveness in the face of reality, of ever readiness to dynamically adapt one's belief to facts.

In this way, our beliefs may at all times be said to be as close to the facts as we can get them. If we follow such sober inductive logic, devoid of irrational acts, we can be confident to have the best available conclusions in the present context of knowledge. We generalize when the facts allow it, and particularize when the facts necessitate it. We do not particularize out of context, or generalize against the evidence or when this would give rise to contradictions.

Hume doubted the validity of generalization because he thought that we adopt a general proposition like All X are Y, *only* on the basis of the corresponding particular Some X are Y. But if the latter was *sufficient* to (inductively) establish the former, then when we were faced with a contingency like Some X are Y and some X are not Y, we would be allowed to generalize both the positive and negative particulars, and we would find ourselves with a contradiction[15] in our knowledge, viz. with both All X are Y and No X are Y.

But since contradiction is error, according to the 2nd law of thought, it follows that a particular is not by itself enough to confirm a generality. To do so, we need also to first adduce that the opposite particular is not currently justified. Note well what we have shown here: this criterion for generalization follows from the law of non-contradiction. Hume and his skeptical successors did not take this additional criterion into account. They noticed the aspect of 'confirmation', but ignored that of 'non-rejection'.

The uniformity principle ought to be viewed as an application of a much larger and important principle, which we may simply call ***the principle of induction*** (in opposition to the so-called

[15] Or more precisely a contrariety.

problem of induction). This all-important principle could be formulated as follows: ***given any appearance, we may take it to be real, until and unless it is found to be illusory***.[16]

This is the fundamental principle of inductive logic, from which all others derive both their form and their content. And indeed, this is the way all human beings function in practice (with the rare exception of some people, like Hume, who want to seem cleverer than their peers). It is, together with Aristotle's three laws of thought, the supreme principle of methodology, for both ordinary and scientific thought, whatever the domain under investigation[17].

Indeed, we could construe this principle of induction as ***the fourth law of thought***. Just as the three laws proposed by Aristotle are really three facets of one and the same law, so also this fourth law should be viewed as implicit in the other three. Induction being the most pragmatic aspect of logic, this principle is the most practical of the foundations of rational discourse.

The principle of induction is a phenomenological truth, because it does not presume at the outset that the givens of appearance are real or illusory, material or mental, full or empty, or what have you. It is a perfectly neutral principle, without prejudice as to the eventual content of experience and rational knowledge. It is not a particular worldview, not an *a priori* assumption of content for knowledge.

However, in a second phase, upon reflection, the same principle favors the option of reality over that of illusion as a working hypothesis. This inbuilt bias is not only useful, but moreover (and that is very important for skeptics to realize) logically rock solid, as the following reasoning clearly shows:

This principle is self-evident, because its denial is self-contradictory. If someone says that *all appearance is illusory, i.e. not real*, which means that all our alleged knowledge is false, and not true, that person is laying claim to some knowledge of reality (viz. the knowledge that all is unreal, unknowable) – and thus contradicting himself. It follows that we can only be *consistent* by admitting that we are indeed capable of knowing some things (which does not mean everything).

It follows that the initial logical neutrality of appearance must be reinterpreted as in all cases an initial reality *that may be demoted* to the status of illusion if (and only if) specific reasons justify it. Reality is the default characterization, which is sometimes found illusory. Knowledge is essentially realistic, though in exceptional cases it is found to be unrealistic. Such occasional discoveries of error are also knowledge, note well; they are not over and above it.

If we did not adopt this position, that appearance is biased towards reality rather than illusion, we would be stuck in an inextricable agnosticism. Everything would be "*maybe real, maybe*

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[16] I have formulated and stressed this principle since I started writing logic, although I here name it "principle of induction" for the first time. See, for instances: *Future Logic*, chapter 2, etc.; *Phenomenology*, chapter 1, etc.; *Ruminations*, chapters 1 and 2.

[17] I stress that here, to forestall any attempt to split ordinary and scientific thought apart. We should always stress their continuity. The difference between them is (theoretically, at least) only one of rigor, i.e. of effort to ensure maximal adherence to logic and fact. This only means, at most, that more ordinary people fail to look carefully and think straight than do most scientists – but both groups are human. Another important thing to stress is that this method is the same for knowledge of matter or mind, of earthly issues or metaphysical ones, and so forth. The principle is the same, whatever the content.

illusory" without a way out. But such a problematic posture is itself a claim of knowledge, just like the claim that all is illusory, and so self-inconsistent too. It follows that the interpretation of appearance as reality until and unless otherwise proved is *the only* plausible alternative.[18]

If appearance were not, *ab initio* at least, admitted as reality rather than as illusion or as problematic, we would be denying it or putting it in doubt without cause – and yet we would be granting this causeless denial or doubt the status of a primary truth that does not need to be justified. This would be an arbitrary and self-contradictory posture – an imposture posing as logical insight. All discourse *must* begin with some granted truth – and in that case, the most credible and consistent truth is the assumption of appearance as reality unless or until otherwise proved.

We may well later, *ad terminatio* (in the last analysis), conclude that our assumption that this appearance was real was erroneous, and reclassify it as illusory. This happens occasionally, when we come across conflicts between appearances (or our interpretations of them). In such cases, we have to review in detail the basis for each of the conflicting theses and then decide which of them is the most credible (in accord with numerous principles of adduction).

It should be stressed that this stage of reconciliation between conflicting appearances is not a consequence of adopting reality as the default value of appearances. It would occur even if we insisted on neutral appearances and refused all working hypotheses. Conflicts would still appear and we would still have to solve the problem they pose. In any case, never forget, the assumption of reality rather than illusion only occurs when and for so long as no contradiction results. Otherwise, contradictions would arise very frequently.

> Note well that I do not understand appearance in quite the same way Edmund Husserl does, as something *ab initio* and intrinsically mental; such a view is closer to Hume or even Berkeley than to me.
>
> The ground floor of Husserl's phenomenology and mine differ in the primacy accorded to the concepts of consciousness and of the subject of consciousness. My own approach tries to be maximally neutral, in that appearances are initially taken as just 'what appears', without immediately judging them as 'contents of someone's consciousness'. Whereas, in Husserl's approach, the wider context of appearance is from the start considered as part and parcel of the appearance.
>
> For me, some content comes first, and *only thereafter* do we, by a deduction or by an inductive inference, or perhaps more precisely by an intuition (an additional, secondary, reflexive act of consciousness), become aware of the context of consciousness and conscious subject. At this later stage, we go back and label the appearance as a "content of" consciousness, i.e. as something whose apparition (though not whose existence) is made possible by an act of consciousness by some subject. Content is chronologically primary, the context is secondary.

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[18] Worth also stressing here is the importance of working hypotheses as engines of active knowledge development. A skeptical or agnostic posture is essentially static and passive; taken seriously, it arrests all further development. Scientists repeatedly report the crucial role played by their working hypothesis, how it helped them to search for new data that would either confirm or refute it, how it told them what to look for and where and how to look (see for instance, Gould, p. 172). This is true not only of grand scientific theories, but of ordinary everyday concepts.

> Whereas in Husserl's philosophy, the fact of consciousness and its subject are present from the start, as soon as the appearance appears. Husserl's mistake, in my view, is to confuse logical order and chronological order, or ontological and epistemological. Of course, logically and ontologically, appearance implies consciousness and someone being conscious; but chronologically and epistemologically, they occur in succession.
>
> As a result of this difference, his approach has a more subjectivist flavor than mine, and mine has a more objectivist flavor than his. Note, however, that in his later work Husserl tried more and more to shift from implied subjectivism to explicit objectivism.

We have seen the logic of induction in the special case of generalization. Given the positive particular 'Some X are Y' (appearance), we may generalize to the corresponding generality 'All X are Y' (reality), *provided* we have no evidence that 'Some X are not Y' (no conflicting appearance). Without this caveat, many contradictions would arise (by generalizing contingencies into contrary generalities); that proves the validity of the caveat. If (as sometimes occurs) conflicting evidence is eventually found (i.e. it happens that Some X are not Y), then what was previously classed as real (viz. All X are Y) becomes classed as illusory (this is called particularization).

Induction is a flexible response to changing data, an ongoing effort of intelligent adaptation to apparent facts. Few logicians and philosophers realize, or take into consideration, the fact that one of the main disciplines of inductive logic is **harmonization**. They discuss observation and experiment, generalization and adduction, and deduction, with varying insight and skill, but the logic of resolving contradictions occasionally arrived at by those other inductive means is virtually unknown to them, or at least very little discussed or studied. This ignorance of, or blindness to, a crucial component of induction has led to many foolish theories[19].

Notice well, to repeat, the *conditional form* of the principle of induction: it grants credibility to initial appearances "until and unless" contrary appearances arise, which belie such immediate assumption. Thus, in the case of the narrower uniformity principle, the initial appearance is the known few cases of similarity (or confirmation) and the fact of not having to date found cases of dissimilarity (or conflicting data); this allows generalization (or more broadly, theory adoption) until if ever we have reason or evidence to reverse our judgment and particularize (or reject, or at least modify, the theory).

The principle of induction may likewise be used to validate our reliance on intuition and sensory and inner perception, as well as on conception. It may also be applied to causality, if we loosely formulate it as: order may be assumed to exist everywhere, until and unless disorder appears obvious. However, the latter principle is not really necessary to explain causality, because we can better do that by means of regularity, i.e. with reference to the uniformity principle, i.e. to generalization and adduction.

In any case, the principle of induction is clearly a *phenomenological* principle, before it becomes an epistemological or ontological one. It is a logical procedure applicable to *appearance as such*, free of or prior to any pretensions to knowledge of reality devoid of all illusion. The claims it makes are as minimal as could be; they are purely procedural. It is for this reason as universal and indubitable as any principle can ever be.

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[19] For example, Hempel's so-called paradox of confirmation.

Moreover, the principle of induction (and likewise its corollary the uniformity principle) applies equally to the material, mental and spiritual realms. It is a valid method of dealing with data, independently of the sort of data involved, i.e. irrespective of the 'substance' of the data. Many people associate induction exclusively with the physical sciences, but this is misconceived. Inductive logic sets standards of judgment applicable in all fields – including in psychology and in moral and spiritual concerns.

3. Causation, necessity and connection

One of the main battlegrounds of Hume's attack on induction is his treatment of **causation**. This is no accident, since one of the most important functions of induction is to find and establish causal relations. If we now turn our attention to this issue, we find almost exactly the same error on Hume's part.

He defines causation as "constant conjunction", ignoring the equally important inverse (*a contrario*) aspect of it. In truth, causation (in its strongest determination) of Y by X would be defined as follows: "X is always accompanied or followed by Y" (the positive aspect), *and* "not X is always accompanied or followed by not Y" (the negative aspect).

The constant conjunction of *the presences* of X and Y would not by itself convince us there is causation between them; we would also have to find that *the absences* of X and Y are likewise related. This is at least true in the strongest determination of causation, known as complete and necessary causation. There are in truth lesser determinations, but these similarly include both a positive and a negative side, so the argument holds for them too[20].

To define causation, as Hume did, only with reference to the positive aspect of it, would necessarily make the bond involved seem more flimsy. The negative aspect is what gives the positive aspect its full force. The coin is two-sided. If one focuses only on the complete causation and ignores the underlying necessary causation, it is no wonder that one (like Hume) sees no "necessity" in causation.[21]

The idea of causation thus involves not just one but two generalizations, viz. a seemingly constant conjunction between X and Y, *and* a seemingly constant conjunction between the negation of X and the negation of Y. Note this well, one cannot refer to "constant conjunction" without admitting generalization.

And one cannot refer to causation without considering both the presences and the absences of the putative cause and effect. I say 'putative' because it is not right to call the two events or things concerned a cause and an effect till they have been formally established to be so[22]. A cause is generally understood to be something that *makes a difference to*, i.e. has an effect on, something else. If something has no effect on anything it cannot rightly be called a cause.

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[20] As I show in great detail in my work *The Logic of Causation.*

[21] Indeed, if one or both of the things labeled X and Y is/are categorically constant, the constant conjunction of X and Y is formally true even though the two things are independent of each other. For the constancy to be applicable specifically to the conjunction of X and Y, there must be inconstancy in opposite circumstances.

[22] Many fake arguments against causation are based on naming the items under consideration cause and effect before they have been demonstrated to be so.

Another way to express this is to point out that "constant conjunction" is a very ambiguous term, because it does not specify direction. At first sight, it means that the cause (X) is always followed (or accompanied) by the effect (Y) – i.e. 'if X, then Y". But upon reflection, it also might refer to the reverse direction, viz. that the effect always implies (or presupposes) the cause – i.e. "if Y, then X". And in the last analysis, the correct understanding (for the strongest form of causation) is that both those directions should be intended – for that would ensure the above mentioned double condition of causation; i.e. that the relation have both a positive and negative side (since "if Y, then X" can be contraposed to "if not-X, then not-Y).

"Constant conjunction" would be a correct description of (complete necessary) causation, only if the expression were understood in this double manner. The vagueness of the phrase makes it possible for Hume to treat it as if it only meant "every occurrence of C has an occurrence of E attached to it" – while at the same time the phrase subconsciously impinges on us as meaning a two-way constancy of conjunction, i.e. as including "every occurrence of E has an occurrence of C attached to it". Because of this theft of tacit meaning, many of Hume's skeptical statements about causation seem superficially credible when they are not in fact so.

As a result of the vagueness of his treatment, Hume seemingly considered only complete causes to be causes – and simply did not take into consideration partial causes. Moreover, he seems to have totally ignored necessary and contingent causation. These suspicions are suggested by his definition of causation as 'constant conjunction'. Such a definition fails to take into account partial causes on the positive side, and necessary and contingent causes on the negative side. It covers just one corner of the domain of causation. (And of course, as we shall see later, it also ignores indeterministic causality, i.e. volition.)

Hume, furthermore, argues that generality of conjunction is not the same as **necessity**. If two things *are* constantly conjoined, it does not mean that they *must be* so. This is true, but to raise this as an objection is to fail to realize the exact logical relation between the actual modality (are) and necessity (must be). They are two *modal categories*, and their relation is simply this: that necessity is *more general than* actuality, just as actuality is more general than possibility.

That is to say: to affirm the 'necessity' of some relation is to engage in a larger generalization than to affirm its 'general' actuality. It follows that if one admits the meaningfulness and validity for a general actual conjunction, one must equally admit them for the more pronounced necessary conjunction. If generalization can go so far, it can in principle go farther still. To accept the one without the other, just because necessity is more abstract (higher up the modal scale) than general actuality, would be arbitrary. There is no logical basis to be choosy like Hume.

Indeed, when Hume denies the possibility of human knowledge of necessity (admitting at best generality, if that), what is he doing in fact other than claiming for himself a necessity? After all, impossibility (i.e. negation of possibility) is simply the negative form of necessity (i.e. it is necessity of negation). Therefore, Hume is here again in a position of inextricable self-contradiction.

Additionally, it is logically impossible to deny the concept of necessity while admitting that of possibility. The moment one admits some things as possible (as their actuality logically implies them to be), one must equally admit some others are impossible. That is, there are limits to all possibilities. If everything were only possible, nothing at all would be possible for

contradictories would have to intertwine. Thus, denying all necessity is a logically untenable position.

There is yet another way that Hume's skeptical approach to causation relates to his problem with induction. He repeatedly asks on what basis we believe in a causal "**connection**". According to him, all we observe and can observe are the happenstances of conjunction; *we never observe and can never observe any link or tie between the things conjoined*.

Connection is not an observable fact that we can generalize from, even granting generalization to be valid. Causation is at best, he implies, a generalization about conjunction – but it tells us nothing of a stronger underlying bond, which is really what we popularly understand by causation. The idea of connection is thus an after-the-fact projection of some obscure force unto an essentially statistical report; it assumes something more than what is empirically given.

In reply, we should first point out that 'conjunction' is not a concrete object, but an abstraction. Phenomenologically, it refers to the appearance of two objects side-by-side in some context. The term does not refer to a phenomenon, something with sensible qualities in itself – it refers rather to a relation between phenomena (or, similarly, other appearances or concepts) that we project to unify them for our rational purposes. It is a tool of ratiocination.

'Connection' is also an abstract term. We might therefore ask how come Hume acknowledges conjunction but not connection. The answer would be that the latter is a more complex abstraction than the former. Connection is not as immediately related to observation as conjunction. More imagination is needed to grasp it, because it refers to collective rather than to individual properties of things.

It is true, as Hume implies, that causation (i.e. deterministic causality, as distinct from volition) is never known or knowable in individual cases, except through knowledge of the behavior of kinds of things. Therefore, causation cannot be generalization of perceived individual connections, but only generalization from individual conjunctions. Connection is a rational, top-down idea, more than an empirical, bottom-up idea. It is imagined with reference to many observations, rather than simply observed.

Even though Hume correctly realized this, his objection to connection has no weight, because according to inductive logic (viz. the principles of adduction), we can imagine any thing we choose as a hypothesis, and affirm it as true, provided and so long as it remains compatible with all experience (on both the positive and negative sides), meaningful, consistent with itself and all other empirical and abstract knowledge, and more coherent, relevant[23] and credible than all alternative hypotheses.

In other words, what Hume is here refusing to comprehend is that most human knowledge is based on abstraction and imagination. He fails to understand that this is quite legitimate, provided it is properly regulated by the rules of adduction. Generalization directly from experience is just one kind of induction, the simplest. More broadly, we have the process of

[23] Relevance here refers to there being more than only compatibility between the thesis and empirical data; for the thesis to be relevant to the data at hand, it must imply some of them and thus conversely be fortified by them. The thesis is thus useful, in somewhat explaining the data. And it must be more useful than others, for if it is only as useful and sound as its alternative(s), it remains problematic (i.e. we cannot decide between them all).

adduction, i.e. of forming fancy or complex hypotheses and testing them repeatedly both experientially and rationally.

The idea of causal connection (or tie or link or bond) is just one such hypothesis. It is indeed not a direct generalization from experience like "constant conjunction", but is a quite legitimate and ordinary adduction from experience. It is a rational construct we find useful for our understanding, both consistent with all evidence we have from experience and internally consistent. That is, the genesis of the concept of connection accords with the scientific method.

A common objection is: "night follows day and day follows night, but we do not say that day causes night or vice versa". Indeed, more generally, every impermanent thing is sure to be followed sooner or later by its negation; but we do not consider such sequences of events as consequential. Sequence is not always consequence. Hence, causation is something more to us than mere repeated togetherness. We need a concept of connection, over and above that of mere constant conjunction, to be able to express this important thought. No tautology is involved.

We could further suggest that "connection" is not commonly thought of as something general, the same abstract ingredient in all particular cases of causation. In practice, something specific and relatively concrete is in each case identified as the operative connection. A more precise analysis is required in each case, to determine where the connection lies. For instance, in the case of day and night, the common ingredient is that of the sunshine and earthly rotation, with some exceptions during eclipses due to the moon.

Thus, the phenomena of day and night may be said to be due to the operation of common causatives. Their constant conjunction is due to them both being alternative effects of certain other phenomena. They must succeed each other, because they cannot occur at the same time. Under certain circumstances, the one occurs; under the remaining circumstances, the other occurs. Sun plus earth facing this way and moon in that position gives day; the same with earth facing the other way gives night; and so on.

We may generalize this example by saying that we should regard constant conjunction as only a first *indicator* of causation. It is indicative of causation in most instances, as the initial default categorization. But in some instances, we must admit that the conjoined phenomena succeed each other due to some third factor (or collection of factors), with which they are indeed both in turn constantly conjoined. They have some common cause(s), or constant conjunct(s), which more precisely explain their surprising regularity of succession.

In such cases, we would not call the two phenomena 'directly' causally connected (even though they invariably alternate). We would, however, instead consider each of them as indeed directly causally connected to the third phenomenon (or set of phenomena)[24]. Thus, our idea of causal connection is a subcategory of constant conjunction, rather than a mysterious universal additive to it. For this reason, we need two distinct concepts.

If we take the trouble to analyze Hume's own discourse, we are sure to find thousands of concepts and beliefs in it *as abstract as* that of causal connection that he so derides[25]. His will

[24] We can then also say that the two phenomena are 'indirectly' causally connected *through or by* the third phenomenon.

[25] To name just one: the notion of "association" of ideas. What is the concrete content of this abstract term? Has "association" a sensible quality, like a color, tune, smell, taste or feel? Clearly not –

to attack this particular abstraction is just an arbitrary refusal to give credence to perfectly rational arguments. He gives no evidence or solid reason to show us that this concept is more tenuous than any of those he himself accepts. We must not condone such double standards.

Generalization and adduction are equally justified, and logically not very different processes. Indeed, each could be viewed as a special case of the other. One cannot admit the one and reject the other. One cannot more or less admit the one, and more or less reject the other. They are essentially the same. Both are *indispensable and inescapable* means of human knowledge, which is mostly conceptual and theoretical. No one can claim to rationally criticize them without using them.

The likes of Hume have this fastidious dissatisfaction with the inherent tentativeness and uncertainty of induced knowledge, because their narrow minds are firmly set on the notion that only deduction yields "proof". Nothing could be further from the truth. Most or all apparently deduced truths depend to some extent on induction from experience. Deduction is just one tool among others in the essentially inductive enterprise of human knowledge. Even the fanatic empiricist cannot formulate any idea without using induction.

The validity (as well as need) of induction is equal to that of deduction. Deduction is not somehow superior to induction. The validation of deduction (i.e. the science of deductive logic, including the laws of thought) depends on a host of inductions. The validation of induction depends on a host of inductions, too. In either case, we rely on our *logical insights*, on what seems or does not seem logical and credible, as well as on a mass of information.

Skeptics cannot refuse such logical insights without appealing to this very same faculty in us. When a skeptic says that this or that idea or belief is or is not logical, or credible, or reliable, or convincing, or provable, or valid, or anything or the sort, he is claiming a logical insight and asking us to have the same logical insight. We may agree or disagree. He cannot in any case claim to function over and above logical insight. He is not superhuman, graced with special privileges.

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yet Hume freely uses this abstraction. Indeed, it is to him the main force (another abstraction) in the mechanics of ideas that he wishes to institute for psychology, emulating Isaac Newton's treatment of physics.

4. The psychology of induction

Hume tried his best to do away with the science of induction by psychologizing our understanding of it. Of course, there is a psychology of induction, since humans have a psyche and induce. But Hume attempted to reduce induction to psychological mechanisms, i.e. to substitute a psychology of inductive thought for the logic of inductive thought. He proposed a description that effectively eliminated the possibility of evaluation and prescription. He sought to permanently undercut all attempts to validate induction.

With this goal in mind, Hume proposed a psychological theory of **generalization**. Generalization was to him a mere quasi-mechanical or instinctive reaction of expectation due to repeated imprints in the mind; it was, effectively, an acquired habit. Essentially, Hume was arguing that the repeated experience of cases of X that are Y drives us to conclude that all X are Y (i.e. to expect that yet unseen cases will conform to past experience), even though in principle things might well (and often do) turn out otherwise.

But according to inductive logic, Hume's theory is just a hypothesis that has to, itself (like all hypotheses), be confirmed repeatedly and never infirmed. Hume cannot regard it as somehow exempt from or transcending inductive logic. It is subsumed by it like any other theory. In fact, there is no psychological drive such as Hume projects – and his theory is itself proof of that, since he himself is aware that things might (and often do) turn out differently than expected.

It is important to notice that, in practice, while we do frequently generalize, we often do so tentatively fully aware that we might have reason to change our minds later on. Moreover, we often abstain from generalizing, because we do not want to proceed hastily or because we are already aware of contrary evidence. Also, we often particularize after having generalized, due to coming across new evidence to the contrary.

It follows from such simple considerations that *Hume's claim to a psychological law is empirically inaccurate*. It is a false observation, an overly hasty generalization from limited or selective introspection. Not only does it not explain the phenomenon of generalization, nor replace the need for a logical and epistemological treatment of the issue, it is an erroneous psychological claim, incorrect psychology.

Another attempt at reductive psychologizing was Hume's attempt to write-off causation as mere **association of ideas**. Basically, this suggests, Hume had personal difficulty distinguishing the fact of causation from our way to knowledge of causation; because he confused the two issues, he tried to conflate them.

Underlying Hume's notion of association of ideas was of course his belief that what we perceive (when we seem to perceive the world) are not things in the world out there but

images of such things produced in the mind through sensations. Due to this erroneous (because internally inconsistent, self-contradictory) analysis of the experiential process, he seems (in some people's eyes) to have some credibility in affirming causation as mere association of ideas.

For Hume effectively adopted John Locke's theory of human knowledge as his starting point. This theory admittedly seems like common sense: we have senses and they obviously somehow produce images and memories in us. However, this is the basis of the worldview that has come to be called Naïve Realism (or uncritical materialism). It seems reasonable, but upon reflection it is found to be wobbly.

If the senses truly produce images in our minds of the world beyond them, it follows that we have no direct knowledge of the world out there at all, but only knowledge of the said images (this term here intends all phenomenal modalities, i.e. not only sights, but also sounds, smells, tastes, and various touch sensations). In that case, how do we know of the bodily senses at all, and on what basis could we at all affirm a world beyond them? It is a seemingly inextricable dilemma.

At first glance, to affirm that our cognitive relation to the world out there is mediated by ideas seems innocuous. It seems obvious enough that our ideas, or most of them, somehow 'represent' or 'correspond to' the world. But upon reflection, such a view of how our knowledge is constituted and justified is logically untenable. How can we claim our ideas representative or correspondent to reality if we have no immediate contact with it by which to make this judgment? How indeed can we even claim our ideas *not to* represent or correspond to reality? We are seemingly doomed to utter ignorance.

To his credit, Hume (unlike Locke[26]) became aware of the insuperable difficulty that the common sense theory of knowledge raised. Less to his credit, Hume derived a deep skepticism from this puzzle, because he effectively assumed there was no other approach. That is, rather than considering Locke's particular theoretical approach to have caused the dilemma, he viewed the problem as a definitive cause for doubting all human knowledge as such.

That such a radical doubt in turn cast doubt on his own faculty of knowledge and conclusions apparently did not cross Hume's mind (or not sufficiently). For, though henceforth fundamentally a skeptic, he continued seeking and claiming knowledge. But he did not try very hard to find a solution to the inherent problem. He never discovered the solution made possible by a phenomenological approach.[27]

This approach is encapsulated by the aforementioned *principle of induction*, which starts the enterprise of knowledge with regard to appearances rather than to sense perceptions. 'Appearances' refers to the contents of consciousness irrespective of their source, so this term does not have presuppositions like 'sense perceptions'. It is not a verbal issue, but one of

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[26] I am stereotyping things a bit, because in truth Locke was somewhat aware of the problem, and so was Berkeley after him (and before Hume). Perhaps the philosopher most to blame should be Descartes. But I cannot here get into the fine details of history.

[27] This has come much later in the history of philosophy. Even Immanuel Kant, Hume's intellectual successor, never grasped phenomenology, but instead produced a complicated system of philosophy that increased the appearance-reality chasm. Note that when I use this term, I do not necessarily mean the Hegelian or Husserlian attempts at phenomenology, though these two later philosophers certainly played important roles.

ordering of knowledge, note well. In a phenomenological perspective, Locke's theory regarding sensations and ideas is just that – one attempted explanation of certain appearances. Seen in this light, the difficulties it presents seem far less threatening.[28]

Now, all this is said here only to explain why Hume was more or less bound to opt for a reduction of causation to 'association of ideas'. Since his viewpoint effectively *divorced* ideas from their objects, he could not talk about the objects themselves without some nagging discomfort, and he was pretty well cornered into rather discussing ideas.

But it must be stressed that for us, who are free of the dilemma posed by Locke's theory thanks to a more phenomenological approach, the scenery looks very different. We can logically distinguish ideas from the objects they intend – be these objects physical, mental or spiritual. Although ideas might conceivably always appear in certain sequences, this is not for us sufficient reason to declare the objects they intend to be causally related.

Here again, we must apply deductive and inductive standards to judge the issue.

For a start, it is worth pointing out that the concept of association of ideas is inherently one of causation. Leaving aside Hume's view of causation as mere constant conjunction as against connection, to say that ideas are associated in some way is to claim a connection of some sort between them. If we think in terms of one idea 'giving rise to' another, or we use any other such expression, we are thinking causation. The implication may be tacit, but it is clearly there.

That the causal sequence concerns the specific kind of thing we call ideas, rather than the kind of thing we call objects, is irrelevant to the relation itself, which is conceived as technically the same irrespective of the kind of thing related. Causation is a certain kind of relation between terms or theses, which has nothing to do with their actual contents.

To say that the idea of X causes the idea of Y is as much a claim to causation as to say that X causes Y. The formal proof is that we can call "the idea of X" a special case of X, and "the idea of Y" a special case of Y. In formal logic, X and Y are symbols for any two terms; they are not reserved for objects as against ideas. For this reason, the principles developed with regard to X and Y are universal.

If we formally admit a causative relation between ideas (or impressions, sensations, concepts, beliefs, thoughts, or any such mental phenomena), there is no reason for us not to admit a causative relation between other kinds of things (i.e. between non-ideas, viz. the objects of most ideas). To accept the one and refuse the other, as Hume does, can only be arbitrary, for there is nothing to formally distinguish the two. The variables differ, but the underlying relation between them is the same.

In short, our use of the word association in one case and causation in the other is a mere verbal embellishment. Hume's main argument is thus based on a superficial verbal distinction. And here again, his attempt to substitute psychology for logic is implausible. The truths of logic are independent of any psychological thesis.

Secondly, Hume is incoherent when he formulates a concept of association of ideas that is meant *to exclude* a concept of causation between the objects the ideas refer to. Such an exclusive contrast between the two concepts commits the stolen concept fallacy. For to

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28 The reader is referred to my work on phenomenology for more on this topic.

invalidate the association of ideas, i.e. to point out that ideas may be erroneously associated, we need to have a more objective knowledge to compare to. It is logically impossible to claim associations of ideas to be occasionally or inherently wrong, without claiming separate knowledge of the true causation between the objects concerned.

In the very act of downplaying or denying causation between objects by positing association of ideas, Hume is relying on his and our past experience that sometimes associations do not match causations. If we had no such past experiences, we could not comprehend Hume's argument, or be convinced by it. Hume's discourse tacitly implies his and our ability to grasp causation independently of association, i.e. that we all have access to some objective reality.[29]

Hume is here committing the same silly error Kant would later commit when claiming that things as they really are ("in themselves") are radically different from things as they appear. How could *he* know it? No one can consistently postulate a conflict between reality and appearance without having access to both. If someone accuses humans of total delusion, he forfeits all logical right to discuss the presumed 'real' world, for all such discussion (even hypothetically) would be self-contradictory, since it is itself a claim to some knowledge.

The critic cannot claim to be an exception to the general rule he posits. We cannot project a scenario that excludes us – but some people keep trying to! We admittedly all have some illusions sometimes; none of us are infallible – but this is a far cry from total delusion.

It should be noticed that we are well able to distinguish the two classes, i.e. ideas and objects. Hume does so in practice, though he denies our ability to do so theoretically. Indeed, how could his discourse be at all meaningful to him and us, if we could not all make the distinction? If apparent objects were truly no more than ideas, it is doubtful we could even imagine such a distinction; certainly, it would be logically self-contradictory in the way that Kant's dichotomy later was.

Thirdly, let us consider the facts of the case in more detail. Note that we ordinarily pass no time wondering whether our ideas are repeatedly conjoined, but only concern ourselves with their objects. Moreover, we might ask whether any two ideas are ever in our actual experience constantly conjoined; the answer seems evident to me – it is no. On the other hand, many objects do seem to us constantly conjoined.

Moreover, if we introspect sufficiently, we easily notice that ideas may become associated in our minds for reasons that have nothing to do with the objects they intend. Such association is not based on constant conjunctions, but on a single coincidence. The strength of mental association is not due to statistical frequency. For instance, a certain musical tune reminds me of a certain woman, just because it happened to be playing in the restaurant where we sat the day I met her. I may well have heard the same tune a hundred times before, without any association occurring.

This means that in our common everyday experience, without reference to Hume, the conjunction of ideas and the conjunction of the objects they intend are two quite different issues. *Even if* we observed our ideas and found them constantly conjoined, we would not necessarily conclude that the objects they intend are causally related; we are not (most of us)

[29] Hume obviously in fact believed in the existence of the external world, since he invested so much of his time writing and publishing books for others to read!

that stupid. As well, we are well able to believe two objects to be causally related *even while* our ideas relative to these objects do not readily arise together.

It is also worth pointing out that, intuitively, we have the volitional power (often if not always) to arouse or suppress ideas, whereas we do not seem to have similar power relative to apparent objects. We can ignore objects, or forget them, but that does not wipe them out: if we look for them again they reappear or someone else might still see them. But in the case of ideas, or more precisely many memories and derived imaginations, we experience a greater power of manipulation. On this basis, we expect the associations between ideas to be more tenuous: they depend more on our will.

All such simple observations and arguments again take us to the conclusion that Hume indulged in an excessively hurried generalization, from very little introspection and reflection. He was either lazy or dishonest, focusing on the data that supported his pet theory and ignoring the data and reasoning that contradicted it. The matter is open to objective judgment – it is not my word against his: everyone can carefully consider the data and judge independently.

The philosophical sciences of logic, phenomenology, epistemology and ontology provide the blueprint and guidelines for induction. There is of course additionally the need to consider the psychology of induction, since after all induction is an activity of the human psyche. Through such a complementary study, we can better comprehend how induction actually occurs. But psychology and logic are two very different fields.

Briefly put, I would describe the psychology of induction as follows. The human soul has powers of cognition, volition and valuation. All three of these functions come into play in every inductive act. The end is cognitive; the means is volitional (combined with non-volitional elements, provided by the nervous system, mainly the brain); the motivation comes from the valuing of knowledge, or the things or events that knowledge can serve as a means to.

The relation between the said philosophical sciences (including logic) and the psychology of induction (in an individual at a given time) is that the sciences (to the extent that they are known to the person concerned and kept in mind) *influence* the inductive activity of the person. They do not determine it, note well, but they influence it. This relationship thus leaves room for the cognitive, volitional and value-oriented factors of induction.

If the person has a low degree of knowledge or understanding of the scientific underpinnings of induction, he or she will naturally often make errors. However, even without formal training and reflection on the issues of induction, most people do subconsciously frequently think logically and thus a lot of the time have some measure of success in their inductions. Humans, after all, have considerable natural intelligence; else they would not have survived till now. The said sciences are, after all, very recent productions of the human mind.

The root of Hume's problem with induction is perhaps his misconception as to what ideas[30] are. I suggest that in his mind's eye, ideas are clouds of 'mental stuff' produced by sensation. These perhaps very often look like the objects that generated our sensations, but we cannot be

[30] Whereas Locke used the word idea very generally (including all mental phenomena, even emotions), Hume distinguishes primary impressions from derivative ideas, i.e. simple empirical sensations from the more complex mental constructs made with them. However, I here use the term idea much like Locke, because Hume's finer distinction does not affect the issue at hand.

sure of that since we have no access to such objects other than through ideas. Thus, what we actually perceive and know are only ideas. Thus, ideas are veils that separate us from reality, rather than conduits to reality.

This view is, as already pointed out, self-defeating, since it accuses also itself of ignorance and error. However, the point I want to stress here is how ideas are *reified* in Hume's discourse. Because he effectively visualized ideas as atoms of mental substance, his view of human knowledge as a whole was completely distorted.

In fact, an idea is something very abstract, an intention[31] towards some object, a *relation* of pointing in a certain direction, directing our attention hither, rather than a substantial entity. An idea is an idea *of* an object. It has no existence apart from an object of some sort (although, of course, the object concerned need not be real, but may be illusory).

It is certainly true that the physical processes of sensation play a central role in our noetic relation to a domain beyond our apparent physical body. But *it does not follow* that what we perceive when we sense this 'external world' are sensations or even images[32] of the world.

- **The only coherent theory is that what we perceive is *the world itself*.**
- **The images we form in our minds of such primary perceptions are only ex post facto *memories* of what we perceived**[33]**.**
- **The abstract concepts we form thereafter are not mere manipulations of concrete memories, but *relations we intend to the objects initially perceived*.**

The fact that we perceive external objects, and not impressions or ideas of those objects, is certainly marvelous, so much so that we still cannot understand how that might happen. But our difficulty and failure to explain this marvel of nature is not a reason enough to deny its

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[31] The word "intention" is very well chosen here, note well. It is not the idea, or the name for it, that intends the object – it is us, we the subject, who do. The word does not refer primarily to an act of consciousness, in the sense that Husserl defined consciousness with reference to some mysterious "intentionality". Consciousness is not essentially an action, but rather a receptive event. No, intending refers to *an act of volition*. The subject (I, you) programs such an intention into every notion or symbol he produces. The subject wills his attention (awareness, consciousness) in the direction of the object concerned when he again comes across that idea or word. When we communicate, we pass such guides to mental action to each other.

[32] A verbal problem to always keep in mind is the equivocation of the word "sensations": used in a general sense it refers to all sensory material, whereas more specifically it makes us think of touch sensations. Likewise, the word "images" tends to evoke visual images, but in the present context it is meant to refer to any resemblance, i.e. equally to auditory and other sensory phenomena. Such equivocations may seem anodyne, but they mislead many people.

[33] More precisely, **memories** are *physical* items (produced by sensations of visual and auditory phenomena) stored in the brain, which, when (voluntarily or involuntarily) reactivated, project *mental* images or sounds that we inwardly perceive and recognize as previously directly perceived (in the physical world, when that is the case). In the case of smells, tastes or tactile phenomena, I suspect we cannot in this way 'recall' past or present perceptions, but only 'recognize' them as familiar, so the term memory has a slightly different meaning. Note well that we do not commonly confuse our perceptions of material things and events with our memories of such perceptions; it is only armchair philosophers like Locke and Hume who equate these two experiences, quite unthinkingly.

occurrence. That we perceive the world is obvious enough; how such a thing is possible is a distinct question, which we may never answer. Science does not normally deny the very existence of what it cannot thus far explain.

Note well, we can claim knowledge *that* we directly perceive the external world itself, without claiming to know yet *just how* we manage to do so. We know we can, because this is the only consistent theory we can posit, as already explained. But exactly what role the senses and brain play (other than memory production, storage and reactivation) in this evident direct perception is still an open question. The fact that a partial question remains does not invalidate the truth of the partial answer already obtained. There are many issues in the special sciences that remain unsolved to date – and we do not for that reason throw out the knowledge we already have.[34]

It does not follow from such non-skeptical, objectivist theory of knowledge that perception or conception can never be erroneous. Errors in human knowledge are essentially conceptual, and it is the task of logic to minimize them. Perception sometimes seems wrong, after the fact, due to our noticing later percepts that seem to contradict the earlier. In such cases, we realize that in fact we drew some conceptual inference from the initial percepts, which the later percepts make clear was unjustified, and we correct our previous assumption. This is just an application of the laws of thought and the principle of induction to sorting out conflicting perceptions.

Once we comprehend human knowledge in this truly enlightened manner, it becomes clear why Hume was so confused and self-contradictory in his views of induction, and other logical and philosophical issues. If one starts with false premises, one is very likely to end up with false conclusions. He should have been more careful.

Philosophers like Hume have always found the idea that we might indeed be perceiving and conceiving the world out there, and not merely our impressions and ideas of it, difficult to comprehend or explain. This is understandable, because this seeming ability of ours (viz. external consciousness) is something truly surprising and, well, *miraculous* – no better word for it comes to mind.

But then these same philosophers take for granted that our inner perceptions and conceptions are valid and not in need of explanation. They apparently do not realize that this ability (viz. internal consciousness) is also miraculous – indeed, just as miraculous. For the difference between the two, after all, is just one of distance. And who is to say how big the soul (the subject of consciousness) is or where it is in fact located? Why do they assume that it is more 'inside' than 'outside' the apparent body?

In both cases, there is something marvelous, inexplicable – namely consciousness, a line of relation between an object and a subject. How can one existent (a soul, a spiritual entity) experience another (a mental or material phenomenon)? In the case of self-intuition, the

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[34] For example, just what is a "force" like gravity in physics? Or just what is "energy"? Isaac Newton admitted his ignorance, saying "*hypotheses non fingo*" (meaning, I have no explanation); and even after modern developments in physics, like the Relativity and Quantum theories, we still do not know just 'what' these abstractions refer to concretely or 'why' these processes occur. Despite this partial (and even crucial) ignorance, we do not consider physics less of a science. For what is science? It is not omniscience, but merely a guarantee that our current opinions are the best possible in the current context of experience – because the most *rigorously* induced.

subject and object are exceptionally one and the same. But even this is a marvelous event, that something can experience itself.[35]

The mere fact of consciousness is the biggest mystery. In comparison to it, the issues of how far consciousness can go, and how in some instances it is aroused and made possible by sensation and yet the body does not block or distort our view – these are relatively minor issues.

Of course, a theory of the exact role of the senses remains highly desirable. Obviously, each sense organ (whether in humans or other animals) somehow gives the overall organism 'access to' a range of data of a specific sort, and no other: e.g. human eyes open the window to a range of light waves (the visible spectrum) but not to all frequencies (not to radio waves, ultraviolet rays or microwaves, for instances) and not to other modalities (such as sound or chemical signals). The different sense organs have evolved over millions of years (at different rates and in different directions in different organisms).

Without these sense organs, we would not (so it seems) be able to sense external reality. So their role is not only that of memory production, but they are somehow essential to the actual contact between the organism as Subject and material objects it perceives. Even so, to repeat, it cannot consistently be affirmed that what the Subject perceives are internal products of sensation. Nor is the explanation that sense organs serve to filter out some of external reality sufficient. The sense organs must have a more significant role in the Subject-Object interface. But what?

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[35] I leave open whether we can experience *other* souls. Some people suggest it is possible, i.e. claim a sort of other-intuition. Some people claim even to have experienced God.

5. The self or soul

As we saw in the examples of Hume's psychological theories of generalization as habit and of causation as association of ideas, he tended in practice to engage in faulty induction (and of course, faulty deduction).

He synthesized from a little data or a superficial analysis, without paying heed to information or arguments that would have delimited or belied his foregone conclusions. He would focus on or select positive aspects of an issue, those that confirmed his theses, and blithely ignore or discard negative aspects, those that weakened his positions.

Such faulty practices on his part are not surprising, in view of his theoretical opposition to induction, i.e. his belief that induction has an intrinsic problem. If one has a general failure of logical understanding, this will inevitably eventually translate into errors of practice. Conversely, the theoretical error is itself due a practical failure. Of course, such error is never ubiquitous; else the person committing it could not at all engage in discourse.

The same tendency of faulty induction is to be found in Hume's treatment of the human soul and of freedom of the will. Rejecting offhand the Cartesian inference "*cogito, ergo sum*", Hume denied the existence or knowability of a human self or soul, conceiving our common belief in such a thing as due to nothing but the "bundling or collection" of our various perceptions:

> *"It must be some one impression, that gives rise to every real idea. But self or person is not any one impression, but that to which our several impressions and ideas are supposed to have a reference. If any impression gives rise to the idea of self, that impression must continue invariably the same, through the whole course of our lives; since self is supposed to exist after that manner. But there is no impression constant and invariable. Pain and pleasure, grief and joy, passions and sensations succeed each other, and never all exist at the same time. It cannot, therefore, be from any of these impressions, or from any other, that the idea of self is derived; and consequently there is no such idea."*[36]

Though his thinking on this important issue, as on many others, is clearly based on personal observation and insight, showing Hume to be a real philosopher, worthy of considerable respect, his reasoning is here again faulty. He argues that we would need to experience a single "impression", one permeating our whole experience, to justify the idea of a self. By this, he seems to mean a concrete mental phenomenon of some distinct sort. Not finding such a core experience, he reduces our personal identity to at best the sum total of the mass of

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[36] *Treatise*, Book I, Part IV, Sect. VI.

fleeting impressions of all sorts that we obviously have. But we may disagree with this viewpoint on several counts.

First, on what ground does Hume demand at the outset that the self be configured in the way of a single permanent "impression" underlying all inner experience? That must be seen to be a hypothesis of his, one that needs to be inductively proven, and not necessarily as he assumes the only possible way of conceiving the issue. The self might not be as phenomenal an entity as he projects (i.e. an impression), and it may be wiser to define it by referring to its functions (cognition, volition and valuation) rather than to its substance.

With regard to Hume's condition of singularity of impression: it would not be inductively erroneous to claim that the self is the sum total of all impressions. This might be taken to mean that all our impressions are indicative of or even actually cause an underlying entity, which though never perceptible is assumed to endure through time. In other words, the whole is more than the parts. Such assumption would simply constitute a conceptual hypothesis, like for example the hypothesis of electrons in physics as entities underlying electrical phenomena. An abstraction does not have to be identical with the experiential data that supports it.

With regard to Hume's condition of permanence of impression: to demand as he does that we be conscious of the self full time, or even part time, before we believe in it, is not in accord with inductive logic. The latter allows us to extrapolate from occasional apparent self-awareness to an assumption of permanent presence of a real self – this would just be generalization. We might even postulate a self without any direct impression of it, in the way of an adductive hypothesis to be supported by various other experiences and considerations. Either approach would be in accord with inductive logic, provided we obeyed the usual rules of induction (especially, that no contrary evidence or inconsistency be found).

Secondly, Hume is arguing in a circular manner when he says (in the above quotation): "It cannot, therefore, be from any of these impressions, *or from any other*, that the idea of self is derived". Even if we accepted (which I do not, as just explained) his contention that the self cannot be inferred from impressions other than that of the self, it does not follow that we do not in fact have impressions of the self. When he says "or from any other", he means to categorically exclude this special experience, which he claims never to have.

We need to seriously consider the empirical and inductive status of Hume's claim to have no self-awareness. It is important to note that this claim is *negative*, which means that it reports an unsuccessful search for something (an impression he can identify with the self). *How much introspective observation is this claim actually based on?* Did he meditate with great effort an hour a day for five years, say, in search of his self? Or did he, as I suspect, casually look into his mind for five seconds of so, a couple of times, and conclude what he had already decided to assert as true, viz. that he had no self?[37]

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[37] I do not mean to say that had Hume meditated sufficiently, he would necessarily have affirmed the self. Many presumably major meditators deny the self's existence (e.g. the Buddhist *anatman* doctrine), or at least its knowability (e.g. in the *Brihadaranyaka Upanishad*: "Nobody can know the atman inasmuch as the atman is the knower of all things") – not that I always agree with their logic. But the word of a casual observer like Hume is not comparable to that of such meditators. In any case, we are still faced with mere hearsay, which must be empirically and rationally weighed. The said meditators might well be right, but other people cannot take them on faith and abstain from meditation. To claim the knowledge for oneself, one must personally meditate like those meditators did. After that, one must also judge their theoretical claims, and not just assume they were infallible geniuses.

Moreover, whether proposed prejudicially or casually, or after very conscientious investigation, a negative statement like that *always and necessarily involves a generalization*. We generalize from "I looked everywhere in me for a long time, and did not find what I sought" to "there's no such thing as the thing sought, in me or anyone else". This to repeat is a generalization, and there is no way for us to arrive at an empirical negative statement in any other way.

Hume generalizes: from the few moments when he perceived no self, to all his temporal existence; and from his own inner life to the same condition in all other persons. Yet Hume does not officially believe in generalization! Is he exempt? Are we to suppose that he is allowed to generalize (and indeed to do so from very tenuous data, his doubtful introspection), but no one else is? This is clearly either a double standard or a self-contradiction on Hume's part. He postures as an empiricist[38], and is widely so regarded, but his empiricism is clearly very superficial and make-believe.

Thirdly, there is an alternative position (which I adhere to), which is fully in accord with the principles of inductive logic. It is that we all do experience our own self quite often, though such experience may vary in degree and depend on circumstances. The self is always implied and present, in every moment of cognition, volition or valuation. But to be aware of it, or sufficiently aware of it to declare it present with surety, an effort of 'self-consciousness' is needed.

Moreover, such self-consciousness is not a perception, but an intuition, because the self is not a phenomenal entity (i.e. one with visible, audible, or other sensible qualities), but a *non-phenomenal* one. To experience it, one must aim one's awareness 'inward', i.e. towards the sought-for subject, and not outward in the direction of mental or physical objects.

A lot of meditation practice is needed to pacify, silence and still the mind sufficiently to contemplate the self with some clarity and confidence. If there is a stage at which the self effectively disappears, or is seen to be 'empty', as some advanced meditators claim, that stage is much deeper than Hume ever evidently went. So Eastern philosophy cannot be appealed to in support of Hume.

If one expects to find the self in gross sensory or mental "impressions" of the sort Hume had in mind, one will of course be disappointed. But if one realizes that the self is a much more *subtle* appearance than those, to be apperceived rather than perceived, one can well claim to experience the soul directly.[39]

It appears more readily in the way of a 'presence' inherent in all intentions and acts of consciousness, will and valuing, than as an isolated object. But there are suggestions that, at a deeper level, the self can be contemplated 'in itself', and further on (more mystically) as a part or aspect of a universal Self.

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[38] Even as an extreme empiricist, in the sense of modern "logical positivism".

[39] If we try to tell a blind man about color, he may ask us whether it is loud or smells nice or tastes good or feels rough. But we cannot answer his question with reference to such phenomenal qualities, because the answer is a completely other sort of experience. He may then say: there's no such thing as color! But that is just because *he* cannot see it. Similarly, to experience the self, one needs to intuit it – one cannot perceive it, for it has no phenomenal characteristics.

Additionally, we have a justifiable *concept* of self. We could accept the self as no more than a conceptual construct – this would logically be an acceptable position. We are logically allowed and even recommended to propose hypotheses that *unify and explain* empirical data.

We could well argue that events like consciousness, volition and valuation imply a self. They are incomprehensible without the assumption of a self. To be conscious is to have a self; to will is to have a self; to desire or dislike is to have a self. The brain and other sense and motor organs are not themselves conscious or in possession of the power of will; these are not a subject or agent, but mere channels or instruments.

But in my view, this narrow, constructivist position would *not* explain all the facts of experience. For how would we then claim to know specific *particulars* about our own individual mental workings from such a general abstraction? To overcome this difficulty, we have to adhere to an intuitionist postulate.

For instance, if I have a thought right now, I can intimately tell whether that thought is my own will, or occurring without or against my will. I am quite able to distinguish between my own beliefs, wills and values – and those imposed on me by my brain or external influences. If I had no direct intuition of myself, or at least of my own inner acts, no such distinction would be feasible.

No theoretical knowledge of the self can produce such intimate certainties. Therefore, we must admit we do experience the self itself – if only occasionally, e.g. when we specifically make the effort to do so. It is not merely a concept for us, but also a direct experience.

A difficulty in self-awareness is perhaps due to our inability, except possibly in deep meditation, to detect the self as such. Ordinarily, we experience our self through its actual functioning, i.e. when we are involved in particular acts of cognition, volition or valuation. When the self does not 'express' itself in any such acts, it is transparent like space is to our eyes, except perhaps (to repeat) in meditation. Although intuition of self is also an act of the self, there seems to be a requirement that the self first express itself otherwise than through intuition, before intuition can detect it!

Hume refused to acknowledge such appearances of self-consciousness as valid data. He engaged in introspection, but clearly not enough of it; perhaps he was too impatient, and drew a premature conclusion. He generalized – from his own non-experience of self at some time(s) to all persons forever. For these reasons, his negative conclusion cannot be considered an undeniable fact (as many take it to be). It is just a theory, one with very little and inconclusive evidence going for it.

For my part, I insist: there *is* non-phenomenal experiential data from which a concrete idea of self can legitimately be drawn. That momentary self can then be generalized and reasonably claimed more permanent, at least to the earthly lifetime of the individual. We can further speculate that the self exists before and after death; but that is another issue, much harder to establish inductively if at all.

We can *furthermore*, on the basis of the said subtle data as well as with reference to phenomenal impressions, adductively posit a concept of self, an abstract self. Such adduction is even possible without reference to the intuitive data, but merely on the basis of the grosser data that Hume acknowledges. The abstraction so begun then provides support for the intuitive data, and the intuitive data in turn serves to further confirm and enlarge the abstraction.

Thus, to conclude, Hume's skeptical posture towards the self is mainly due to his personal difficulties with introspection and with inductive procedure. He sets wrong theoretical standards of observation and of judgment, and moreover fails in practice to adhere to his own rules and restrictions.

6. Freewill

Next, let us consider Hume's opinions regarding freewill. Given his opinions with regard to the self and to causation, we can with relative ease anticipate the way his thinking will go with regard to human volition and ethics.

Since Hume has denied the self, he cannot be expected to believe in volition in the ordinary sense, i.e. in freedom of the individual soul to will or not-will something irrespective of influences one way or the other. Therefore, one would expect him to opt for some sort of determinism[40]. Although he has denied causation, or our knowledge of it, in the physical realm, this does not logically exclude causation in the "mental" realm, so such determinism would be consistent for him.

Yet, he struggles to salvage for human beings some vestige of volition. We are not in his view mere rubber balls that react to events in wholly predictable ways. We are it seems somewhat free to do what we feel like doing. Our actions are related to our character, desires, passions; it is such distinctive attributes of ours that make these actions our own. We are thus determined by impulses, preferences and emotions – or rather, they *are* 'us', we are their sum total. This is consistent with his view of the self as an aggregate of passing mental phenomena.

This is of course not what we would call free will. It is rather slavery to random passions. Hume admits as much when he says: "Reason is, and ought only to be, slave of the passions, and can never pretend to any other office than to serve and obey them"[41]. By this he means that, though induction and deduction provide us with information that may affect our actions, they cannot determine it. According to him, only the passions can truly move us; it is ultimately with them that we identify and go.

Now, this tells us a lot about the way Hume's mind works, and even about the way many other people's minds work, but it does not accurately reflect the full range of human nature. It may apply to some of the people some of the time, but does not apply to all of the people all of the time. For though it is true that reason does not necessarily affect our actions, it is also true that passions need not do so. Just as the information reason gives us can influence our actions but may well be ignored, i.e. is not determining – so it goes for the passions. We do not have to be

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[40] Parenthetically: to his credit, Hume realizes that freewill ought not be identified with mere spontaneous occurrence. Indeterminism, whether in the physical or mental realm, constitutes a determinism of sorts relative to human beings. If things happen to us at random, without any cause, we are subject to them as surely as if they were determinist causal factors. That is, their own lack of causes does not diminish their causal impact on us.

[41] *Treatise*, Book II, Part III, Sect. iii.

slaves of our passions or identified with them; we are in fact distinct from them and able to transcend them.

It is true that many (maybe even most) people are not aware of this freedom of the will, and let their passions rule them. Some people, by the way, are similarly ruled by their reason, i.e. they are tormented by family, social, political or religious obligations, and unable to resist them. But such passivity or dependence is not normal or inevitable; it is a curable sickness of the soul. The passions, like reason, can only really 'influence' the soul, not 'determine' it – the soul still in all cases has the capacity and the responsibility to choose between them and decide which way to act. This is clear to anyone who practices self-control.

We can with effort learn to rule over our own minds, and indeed such policy is wisdom itself. But this demanding virtue depends on our making a clear distinction between causation (or deterministic causality) and volition (or personal causality), and on our understanding what 'influence' means.

A person is said to be influenced by something to act (or not act) in a certain way if the person's perception or conception of the thing makes acting in that way easier (or harder). Such *facilitation* (or on the contrary, impedance) of the will is never determining: the person remains free not to will in the direction of (or against) the influence; he or she can still go the other way. The potentiality of the will is increased (or decreased), but the person still has the final choice.

Thus, influence is a special sort of conditioning of voluntary action. The action is not caused (in the sense of causation) directly by the event or thing influencing it – but rather, our *awareness* to some degree of that event or thing (be it concrete or abstract) affects us (the doer of the deed), by making such action more or less easy than it otherwise would be. The influential thought pushes us or slows us down, but we still (so long as we have freewill) have to make an effort to actualize anything.

Once we understand the causal relation called influence, we can distance ourselves from our passions and even from our reason, and view them all as mere influential information, to be taken into consideration in motivating or deciding action, but which should never be allowed to usurp the sovereignty of the soul, who ultimately alone commands the will and is responsible for its orientations. But Hume cannot see this, because he is himself still too unconscious and too involved in his passions. Having denied the very existence of a self or person, he naturally misconceives the will as subservient to the passions.

Thus, Hume confuses his personal opinions and behavior with general truths about human nature. Here again, we find him making inaccurate observations and over-generalizing. He does not always realize the hypothetical nature of his propositions, and the need to try to establish them with reference to precise inductive procedures. Since he has misconceived induction to begin with, he has incapacitated himself methodologically.

Philosophers do not have special powers of 'insight' into truth, independent of logical scrutiny and correction. They think like everyone else by inductive means, and they can make mistakes like everyone else if they are not careful.

7. The is-ought dichotomy

David Hume's views and opinions on many philosophical topics seem (to me) to be driven by the desire to exempt himself from 'morality'. That often seems to be the underlying driving force or motive of all his skeptical philosophy, what it all manifestly tends towards. By denying induction, causation, the self and an effective power of freewill, he is justifying the idea that "anything goes" in knowledge and in personal behavior. This overall trend is again confirmed when we consider some of his positions regarding ethical reasoning.

Hume questions the possibility of deriving prescriptive statements, which tells us what we ought to do or not do, from descriptive statements, which tell us the way things are or are not. The distinction between these two sorts of statement is in his opinion so radical that one cannot be reduced to the other. This means effectively that moral or ethical propositions have no formal basis in fact, i.e. they cannot be claimed as true in an absolute sense. There is no logical way, in his view, to deduce or induce an "ought" from an "is".

Prescriptive statements are then, according to Hume, at best just practical advice on how to pursue our self-interest and the interests of the people we value (or more broadly, sympathize or empathize with). This is a kind of pragmatism or utilitarianism, in lieu of heavier moral notions of duty or obligation. In this way, ethics is made essentially amoral – an issue of convenience, a mere description of the ways we might best pursue our arbitrary values. The implication is one of relativism and convention.

It should be added that Hume's conclusion with a non-ethics or relativistic ethic is consistent with his position on freewill. For if we do not really have freewill, but are inevitably driven by our passions, and moreover can rely on them rather than reason for guidance, then we have no need for ethics. *Ethics is only meaningful if we have a real power of choice and must therefore take decisions.*

Hume's view of ethical logic is an interesting mix of truth and falsehood, which is why many have agreed with him and many have found it difficult to refute him. Ethics is of course a vast and complex subject, and I do not propose here to treat the topic in detail[42]. I would just like to show briefly how and why Hume's approach, for all its seeming skeptical mastery, is here again superficial and narrow.

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[42] Note that I do not believe it is the task of the ethical philosopher to foresee every situation in life, and prescribe optimum behavior for them. Certainly, the philosopher is called upon to consider difficult general cases and propose wise responses. But each situation is unique in some respects, so the main task in this field is to teach people to think for themselves – in sensitive, intelligent and logical ways – about ethical issues. Ethical philosophy is primarily ethical logic, and only secondarily deals with certain contents. It is not a totalitarian doctrine. Each person has to live his or her own life.

The issue raised is primarily formal. What are prescriptive propositions and how do they relate to descriptive ones? The obvious answer to the question would be that prescriptions *relate ends to means*. I ought to do (or not-do) this *if* I want to (or not-to) obtain or attain that. The 'ought' (or 'should' or 'must') modality is essentially the bond in a specific kind of if-then proposition, with a desire or 'value' as antecedent and an action or 'virtue' as consequent.

Such if-then propositions are not themselves descriptive, but are deductively derived from descriptive forms. When we say "if we want so and so, then thus and thus is the way to get it", we are affirming that "thus and thus" is/are *cause(s) of* "so and so"[43]. The latter is a factual claim, which may be true or false. It follows that the prescriptive statement can also be judged true or false, at least in respect of the correctness of the connection implied between its antecedent and consequent.

Be it mentioned in passing, prescriptive statements may be positive (imperatives) or negative (prohibitions). As well, note, the negations of prescriptive statements, viz. not imperative (exempt) and not prohibited (permitted) are also significant ethical modalities. But for brevity's sake we will here only concentrate on imperatives, for the rest logically follows.

We see from our above definition of an imperative that it is *conditional*. Good or bad mean good or bad *for* something or someone. The imperative is only true as such *if* we grant that the value pursued is indeed of value. But how can we ever know whether any of our values are valuable in an absolute sense? This is Hume's query, and it is quite valid. But his conclusion that values are formally bound to be arbitrary (i.e. cannot be deduced from plain facts) is open to challenge.

Our task is to show that we can arrive somehow at *categorical* imperatives[44], i.e. ethical standards that can ground and justify all subsequent conditional imperatives. One conceivable way to do so is to use a dilemmatic argument: 'Whether you want this or that or anything else, the pursuit of so and so would in any case be a precondition'.

Something is an absolute value if it is necessary to the pursuit of *any and all* arbitrary values one personally opts for. A relative value can be by-passed in the pursuit of other relative values, but an absolute value is one presupposed in every pursuit and must therefore be respected unconditionally.

Are there any such absolute values? Clearly, yes. An obvious such value is *life* itself: if one lacks life, one cannot pursue anything else; therefore life must be protected and enhanced. Another absolute value is *the self* – if the soul is the source of all our actions, good or bad,

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[43] I won't here go into the different determinations of causation. Suffices to say that obviously if A is the only way to X, then I can say: "I must do A to get to X". But if there are alternative ways to X – say. A, B and C, then I can only say: "I must do A or B or C to get X" – i.e. my prescription is disjunctive.

[44] It should be clear that, although I use this expression intentionally, I do not mean by it the same as Kant did. It is form, not content. I am here discussing formal ethical logic, not advocating a general or particular categorical imperative. Kant considers an imperative categorical if it is universal, i.e. applicable to everyone, all *agents*. Whereas in my view, a categorical imperative can be quite singular. What makes an imperative categorical, instead of hypothetical, is its necessity to all *goals* open to that agent. Logically, this is more symmetrical. What means are universal in this sense, i.e. universal to all goals (not necessarily all people)? Life, bodily wholeness and health, soul, cognition, volition, valuation, mental wholeness and health – these are means we always need to succeed, whatever our particular goals.

then the soul's welfare is an absolute value. Whatever one wants, one needs the physiological and psychological means that make such pursuit at all possible – viz. one's bodily and mental faculties. And most of all, one needs to be present oneself!

These are obvious examples. What do they teach us? If we wish to understand, use and validate ethical propositions, we have to realize *what makes all such discourse possible and necessary*. A simple illustration and proof of that is that if I tell you 'don't follow any ethical doctrine', I am uttering an ethical doctrine, and therefore committing a self-contradiction.

Ethical propositions do not apply to inanimate objects. They apply only to living beings, because only such entities have anything to win or lose. But to apply them to all living beings is not correct, for though plants, insects and lower animals can objectively be said by us to have values, their functioning is either automatic or instinctive, and they cannot understand or voluntarily apply ethics.

Only humans, and maybe higher animals like chimps or dolphins, can have ethical thoughts and the power of will to carry them out. These thoughts are verbal or non-verbal in the case of humans, and necessarily non-verbal in the case of higher animals. Thus, in the last analysis, explicit ethical discourse concerns only human beings.

And we can say at the outset that to engage at all in ethical discourse, humans have to study and take into consideration their nature, their true identity. They have to realize their biological and spiritual nature, the nature of their physical-mental organism and the nature of their soul. Moreover, since biology and spirituality relate not just to the individual in isolation, but to larger groups and to society as a whole – ethics has to be equally broad in its concerns.

If this large factual background is ignored in the formulation of ethical propositions, one is bound to be arbitrary and sooner or later fall into error. In conclusion, we can develop an ethic that involves absolute values and is based on factual truths. Ethics is clearly seen not to be arbitrary, if we consider the conditions that give rise to it in the first place – viz. that we are fragile living beings, with natural needs and limits, and that we are persons, with powers of cognition, volition and valuation.

If all the relevant facts are taken into consideration, then, an "ought" encapsulates a mass of "is" information, and can therefore be regarded as a special sort of "is". That is, if properly developed, an ethical statement can be declared true, like any other factual claim. It is ethical fact, as against 'alethic' fact. Of course, if not properly induced and deduced, an ethical can be declared false – but not all ethical propositions are false.

Hume failed to realize the said logical preconditions of any ethics, and therefore got stuck in the shallow idea that ethics cannot be deeply grounded in fact. Since the scope of his considerations was partial, he could at least see that an "ought" is to start with conditional, but he could not see further how it could eventually be made unconditional. He therefore wrongly concluded that inferring an "ought" from an "is" is fallacious reasoning. This was later pompously called "the naturalistic fallacy"[45].

[45] By George Edward Moore, in his *Principia Ethica* (1903). I say 'pompously' to stress that no logical fallacy is involved, in my view. The issue is a logical problem – but one open to solution. My rejecting this so-called fallacy is not intended to reject offhand Moore's central thesis, viz. that of the intellectual primacy of the concept of 'good', i.e. that we tacitly understand the term in some way before any theory attempting to define it.

8. Hempel's paradox of confirmation

Carl Gustav Hempel[46] in the 1940s exposed an alleged "paradox of confirmation", which suggested that a fully consistent formal inductive logic is impossible. This is commonly called "the raven paradox", and may be described as follows:

a) The observation that Some ravens are black (Some A are B) confirms the hypothesis that All ravens are black (All A are B).

   The latter proposition may be contraposed to All non-black things are non-ravens (All nonB are nonA).

b) Next, consider the observation that Some apples are green (Some C are D). This is convertible to Some green things are apples (Some D are C).

   It follows from this proposition that Some non-black things are non-ravens (Some nonB are nonA), since green things are not black and apples are not ravens.

   Now, just as Some ravens are black (Some A are B) confirms the hypothesis that All ravens are black (All A are B), so Some non-black things are non-ravens (Some nonB are nonA) confirms the hypothesis that All non-black things are non-ravens (All nonB are nonA).

   This induced proposition may in turn be contraposed to All ravens are black (All A are B), and here lies the difficulty, for it appears that the mere observation of some green apples is enough to confirm the hypothesis that All ravens are black! Note well that to achieve this result we did not even need to observe any black ravens.

c) It follows from the preceding that we can equally well, using the same logical process, given Some apples are green, confirm the hypothesis that All ravens are pink, or any other color (except green) for that matter.

d) This is in itself a mystery: how can apples tell us about ravens? Intuitively, this has to be viewed as a *non sequitur*.

   Moreover, in the case of black ravens, the existence of black ravens has empirical backing, as already indicated; so the 'inference' from green apples to All ravens are black still seems somewhat reasonable. But in the case of pink ravens, we have never observed any such animals; so the 'inference' from green apples to All ravens are pink seems quite unjustifiable.

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[46] Germany-USA, 1905-97.

> Moreover, knowing by observation that Some ravens are black, how can we 'conclude' that All ravens are pink? Even if we do not claim all ravens black, but only claim all ravens pink, we would in such circumstances be upholding contrary propositions, namely the particular one that some ravens are black and the general one that all ravens are pink.
>
> Moreover, even if we have never observed the color of any ravens, we can according to the above inductive process simultaneously conclude many contrary statements such as All ravens are black, All ravens are pink, All ravens are orange, etc. This too is a result that flies in the face of the law of non-contradiction.
>
> Furthermore, the same can be done with reference not only to green apples, but also to apples of other colors (except black or pink, etc. as the case may be), and indeed to things (non-ravens) other than apples. In that event, almost anything goes in knowledge, and *we can at will affirm or deny just about anything about just about everything*!

This then, according to traditional presentations[47], is Hempel's paradox. It appears, from such analysis that the inductive processes of confirming hypotheses (such as generalizations directly from experience or indirectly from logical derivatives of experience) are fundamentally flawed. The analysis involved is quite *formal*, i.e. it can be performed in terms of symbols like A, B, C, D – and so it has universal force.

It follows that induction is bound to result in various absurdities: apparent non-sequiturs, many contradictions, and ultimately imply the arbitrariness of all human knowledge. Clearly, Hempel discovered here a serious challenge to inductive logic and logic in general.

As I will now show in detail, *the above analysis is inaccurate in some important respects*. I will show that although Hempel did indeed discover an interesting formal problem for logicians to consider and solve, this problem does not result in what we would call a paradox. That is, there are valuable lessons to be learned from Hempel's paradox (as we may continue to call it conventionally), but it does not present logic with any insurmountable predicament.

a) The first operation described above is the commonly used inductive process of *generalization*. A particular proposition (Some A are B) is turned into a general one (All A are B). The particular supports the general in the way that positive evidence confirms a hypothesis. Their logical relation is adductive. 'Some' here means 'at least some, possibly all and possibly only some' – and by generalizing we are opting for the hypothesis 'all' in preference to the hypothesis 'only some'.

   However, it would be an error to consider that Some A are B is *alone* capable of inductively justifying All A are B. Such generalization is an inductively permissible inference *provided we have looked for and so far not found any* A that are *not* B. For if we *had* found (by direct observation or by some reasoning) that Some A are not B, we would certainly not have generalized. Moreover, if we *later* do come across an A that is not B, we would have to *particularize* All A are B back to Some A are B.

   This condition *sine qua non* of generalization, viz. to remain on the lookout for contradictory instances and adjust one's judgment accordingly, is not stressed or even

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47 See for instance: the article in Wikipedia at http://en.wikipedia.org/wiki/Raven_paradox.

mentioned in the earlier presentation, note well. Yet this is a known and accepted rule of scientific thought at least since the time of Francis Bacon, who emphasized the importance of the "negative instance" in induction. To ignore this condition is bound to lead to contradictions sooner rather than later.

Regarding the contraposition of All A are B to All nonB are nonA, it is of course a deductive act. Even so, we must keep in mind that the conclusion All nonB are nonA is only due to the prior inductive inference of All A are B from Some A are B. No observation is required for the deduction, but we remain bound by the need to keep checking the previous inductive act, i.e. to remain alert for eventual cases of A that are not B.

b) Now, let us grant that Some C are D, as above. Some C are D readily converts to Some D are C. However, Some D are C does not formally imply that Some nonB are nonA – some syllogistic inference is tacitly involved here, which ought to be brought out in the open. Clearly, we tacitly take for granted the premises that *green is not black* and *apples are not ravens*, whence: the following two successive syllogisms are constructed:

1st figure, EIO:

No green thing is a black thing (No D are B)

Some apples are green (Some C are D)

Therefore, Some apples are not black (Some C are not B).

3rd figure, AII:

All apples are non-ravens (All C are nonA)

Some apples are non-black (Some C are nonB)

Therefore, Some non-black things are non-ravens (Some nonB are nonA).

Whence, by generalization we obtain: All non-black things are non-ravens (All nonB are nonA); and then by contraposition: All ravens are black (All A are B). Note that the premises that led to this general conclusion do not include Some ravens are black; i.e. this conclusion is based on no empirical observation of black ravens.

Note too that we could have obtained the same result with the premises No ravens are green (No A are D) and No apples are black (No C are B). Note also that, though the syllogisms involved are deductive processes, all such tacit premises require prior observations and generalizations (i.e. inductions) to be adopted.

Moreover, it is significant to note that these syllogisms could not be constructed if the colors of the ravens and apples under consideration were the same (both green or both black), or if ravens and apples were not mutually exclusive classes. We also assume here that a raven cannot have more than one color (e.g. be partly black and partly green or whatever, or sometimes the one and sometimes the other); and similarly for an apple.

The next step was to generalize Some nonB are nonA to All nonB are nonA. But here again, generalization is allowed only provided we have no evidence or inference from any other source that Some nonB are not nonA. That is, in our example, we must

remain conscious that it is possible that some non-black things are not non-ravens, i.e. are ravens, which means we might yet find some non-black (albino) ravens out there.

Here too, we must make sure, in accordance with Bacon's crucial principle of adduction, that there is no conflicting observation that obstructs our expansive *élan*. This is all the more necessary, since here the premise of generalization Some nonB are nonA was obtained indirectly by deduction from previous products of induction, whereas previously our premise Some A are B was (supposedly) directly observed.

Note further that these two generalizations have the regulatory conditions that Some A are not B or Some nonB are not nonA, respectively, not be found true – and these conditions are one and the same since these two propositions are logically equivalent by contraposition. This means that in either case, whether we reason directly from black ravens or indirectly from green apples, there is the same implicit condition for generalization – that in our experience or reasoning to date no non-black ravens have appeared.

Thus, whichever of these two generalizations we opt for, the condition that there be no known instances of A which are not B is unaffected, and the dependence of the truth of All A are B on this condition is unchanged. Note too, the same condition holds before and after such generalizations. That is, even after such inductive process, if we discover new evidence to the contrary, we logically may and indeed must *retract*.

As previously stated in c) and d): using the same logical process, given Some apples are green, we can equally confirm the hypothesis that All ravens are pink, and many other wild hypotheses that conflict with each other[48]. Obviously, we are doing something wrong somewhere, and have to take action to either prevent such absurd eventual consequences or correct them when and if they occur. I will now explain the solution to the problem.

Generalization is never an irreversible process. So if any generalization leads to contradictions, we are free and indeed obligated to particularize. The question of course remains: *in what precise direction and how far back should we go?* Still, what this means is that there is no 'paradox' in inductive logic as there is in deductive logic; almost everything (with the exception of logic itself – especially the laws of thought on which it is built) is and ever remains 'negotiable'.

In deduction, a contradiction is a far more serious event, because the process leading up to it is presumably necessary. But *in induction, we know from the outset that the connection between premise(s) and conclusion is conditional – so contradictions are expected to arise and it is precisely the job of inductive logic to determine how to respond to them.*

Dealing with contradictions is a branch of inductive logic, called ***harmonization*** or conflict resolution. This is not something rare and exceptional – but occurs all the time in the development of knowledge. *Sometimes conflicts are resolved before they take shape, sometimes after. If we see them coming, we preempt them; otherwise, we perform the possible and necessary retractions.*

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[48] To show propositions with different predicates are in conflict, we use syllogism. For instance, All ravens are black and All ravens are pink are incompatible, because knowing that No black things are pink, we obtain, by syllogism (1st figure, EAE): No ravens are pink, which is contrary to All ravens are pink.

Particularization of a general proposition is retraction. More broadly, retraction means rejection or modification of a theory in the light of new evidence. Thus, for example: till now, I have seen only black ravens, and assumed all are black; tomorrow, I may notice a white raven, and change my view about the possible colors of ravens.

Hempel is evidently or apparently unaware of this crucial aspect of inductive reasoning, else he would not have viewed contradictions arising in the course of induction as paradoxical. Nevertheless, the situation described by him is interesting in this context, for reasons he did not (I think) realize.

For after the first generalization, starting from Some ravens are black (Some A are B), if we belatedly discover that Some ravens are not black (Some A are not B), *we simply return to our initial observation* that Some ravens are black (Some A are B). Whereas after the second generalization, starting from Some non-black things are non-ravens (Some nonB are nonA), if we belatedly discover the same conflicting evidence, we cannot simply deny All ravens are black (All A are B).

Why? Because *this would still leave us with part of our generalization*, viz. the claim that Some ravens are black (Some A are B). That is to say, we would expect 'All A are B' plus 'Some A are not B' to yield the harmonizing conclusion 'Some A are B and some A are not B'. The negative particular does not eliminate the positive particular underlying the positive generality; since we previously (due to said generalization) believed the generality, we now have a leftover to account for.

In the case of All ravens are black, such retraction is not noteworthy, since we know from experience Some ravens are black; but in the case of All ravens are pink, we have a serious problem, for there is no shred of evidence for a claim that Some ravens are pink! In other words, the proposed retraction cannot suffice in the situation presented by Hempel, i.e. when All A are B is induced from Some nonB are nonA.

In my view, this is the crux of the problem revealed by Hempel's exploration. The problem is not exactly a paradox, since *the validity of generalization formally depends on such process not giving rise to any eventual contradiction*.[49]

That from the observation of some green apples we may by generalization infer that All ravens are black and All ravens are pink and many other conflicting conclusions – this is amusing, but not frightening. For in such situation of self-contradiction, we can by retraction find ways to harmonize our knowledge again. The problem is temporary.

On the other hand, what Hempel has here uncovered is that we cannot always retract simply by particularization of the conflicting theses. Particularization seems acceptable in some cases

[49] A paradox is a thesis that formally contradicts itself or deductively leads to contradictory propositions. From a single such paradox, we may conclude that the thesis in question is false; logic as such is not put in question, because the contradiction involved is merely conditional. A double paradox, on the other hand, is a serious threat to logic; here, both a thesis *and* its contradictory are paradoxical, so the contradiction is *un*conditional. In that case, logic cannot declare either of them true or false – but must among them find either a non-sequitur (as in the Barber paradox) or a meaningless term (as in the Liar paradox). That is, logic must challenge either one or more of the implications involved, and/or one or more of the terms or theses involved. The Hempel scenario does not give rise to an unconditional/double paradox.

(e.g. with black ravens), but in other cases it yields unacceptable results (e.g. with pink ravens), because the logical remainder of such retraction is devoid of empirical basis.

Suppose, using Hempel's method, starting from green apples, we induce both the generalities All ravens are pink and All ravens are orange. These two conclusions are in conflict. Let us say we decide to resolve the conflict by denying them both; that still leaves us with two propositions Some ravens are pink and Some ravens are orange.

These two particular propositions are not in conflict – and, let us take for granted, neither of them has any empirical basis, yet they both got somehow cozily 'established' in our knowledge! They were introduced by the generalizations from green apples, yet they were not dislodged when we abandoned the corresponding generalities. We are stuck with them, even though the complex processes that led to them have been revoked.

It is unthinkable that such *particulars* (whether true or untrue) should emerge from the unrelated observation of green apples (or whatever else). This I believe is the significant problem uncovered by Hempel. The problem is not the conflict of generalities or between general and particular propositions, so it is not about paradox. The problem has to do with 'collateral damage' to knowledge, through incomplete correction of errors.

I suggest the following solution for it: when we generalize from Some A are B to All A are B, and then discover that Some A are not B, we particularize All A are B back to Some A are B. That is normal procedure, which we all commonly practice.[50]

On the other hand, when we obtain All A are B by generalization from Some nonB are nonA to All nonB are nonA (followed by contraposition of the latter), then when we discover that Some A are not B, we cannot merely particularize All A are B back to Some A are B, but must also retract the intermediate premise of the proposition All A are B, viz. All nonB are nonA, and return to Some nonB are nonA.

In view of the latter retraction, we in fact no longer have a basis for claiming Some A are B (this cannot be deduced from Some nonB are nonA). It would be an error of induction to forget the actual *source* of our belief in All A are B. The distinction between the inductive grounds Some A are B and Some nonB are nonA must be kept in mind, so that in the event of discovery of contradictory evidence, viz. that Some A are not B, we particularize back to our *exact same previous position* in each case.

We may thence formulate the following new law of inductive logic, which may be called ***the law of commensurate retraction***: a product of generalization like All A are B cannot be treated without regard to its particular source; when if ever it is denied by new evidence, we must retreat to the same initial particular and not to *some other* particular that was implied by the generality when it seemed true but is now no longer implied by it since it is no longer true.

In other words, when and if we come upon a contradiction of the sort considered here, we must realize that this does not merely discredit the generality that was previously induced, but more deeply discredits the inductive act that gave rise to it. Thus, we should not retract by mere particularization, but carefully verify whether the remaining particular has any independent basis and if it has not we should return far back enough to the *status quo ante* to make sure no unconfirmed particular remains.

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[50] Symbolically, A + O = IO.

This seems like a perfectly reasonable instruction – to reverse and clean up all traces of an inductive act that was found illicit, i.e. that led us into a logical impasse.

All this means that, using ordinary procedures of logic, we would never fall into a self-contradictory situation (e.g. claiming paradoxically All ravens are black and All ravens are pink). The fact that generalizations may yield incompatible results is commonplace; we daily deal with such conflicts without difficulty. When such conflicts arise, we are logically required to harmonize. If we cannot find a specific way to resolve the conflict, the conflict is resolved in a generic manner, viz. all the generalizations involved are put in doubt.

In a situation where two or more propositions are put in doubt by mutual conflict, we would naturally give more credence to one that has some direct empirical basis (like All ravens are black) than to one that merely emerged from indirect projection (like All ravens are pink). We need not treat all conflicting propositions with equal doubt, but may be selective with regard to their inductive genesis.

With regard to the evidence for conflicting thesis – obviously, if we have no data on black or pink ravens, we would not know which way to retract, and both generalizations would be problematic. But if we have observed some black ravens and never observed any pink ones, we would naturally opt for the generalization that All ravens are black (All A are B). On the other hand, if we have observed both black ravens and pink ravens, we would make neither generalization and simply conjoin the two particulars.

With regard to the inductive processes used – direct generalization would naturally be favored over the indirect sort envisaged by Hempel. If the conflict at hand can be resolved by ordinary means, e.g. with reference to empirical considerations, we need not bother to backtrack with reference to process. But in cases where we have no other means of decision, process would naturally be the focus of revision.

A possible objection to the law of commensurate retraction would be that in practice we rarely manage to keep track of the exact sources of our generalizations. Such ignorance could conceivably occur and cause some havoc of the type Hempel described in our knowledge.

However, we may also point out that *in practice we just about never find ourselves in the situation described* by Hempel. How often does anyone generalize from a proposition like Some nonB are nonA? The statistical answer is ‘probably never’ – Hempel’s paradox is just *a remote formal possibility* that logicians have to consider, but its practical impact is just about nil.

Moreover, we are not likely to arrive at a proposition of the form Some nonB are nonA, except by the sort of reasoning above depicted, i.e. through some other terms like C and D. We cannot directly *observe* that Some nonB are nonA. Observation relates primarily to positive phenomena; it can be about negative phenomena but only indirectly. This suggests that if we did encounter a situation of Hempel paradox, we would likely be aware of how it arose.

Another remark worth making is that the above solution of the problem raised in Hempel’s paradox can be characterized as heuristic; it is repair work by trial and error. But I have already proposed in my work *Future Logic*[51] a detailed, systematic, formal treatment of induction, by means of factorization and formula revision. I believe that is free of the

[51] First published in 1990, a few years before Hempel’s death. See part VI.

Hempel's problem, since every formal possibility is included in the factorial formulas developed.

With regard to solutions to Hempel's paradox offered by other logicians, e.g. those by Goodman and by Quine described in the earlier mentioned Wikipedia article:

> "Nelson Goodman suggested adding restrictions to our reasoning, such as never considering an instance as support for 'All P are Q' if it would also support 'No P are Q' … Goodman, and later another philosopher, [W.V.] Quine, used the term *projectible predicate* to describe those expressions, such as *raven* and *black*, which *do* allow inductive generalization; *non-projectible* predicates are by contrast those such as *non-black* and *non-raven* which apparently do not. Quine suggests that it is an empirical question which, if any, predicates are projectible; and notes that in an infinite domain of objects the complement of a projectible predicate ought always be non-projectible. This would have the consequence that, although "All ravens are black" and "All non-black things are non-ravens" must be equally supported, they both derive all their support from black ravens and not from non-black non-ravens."

I find these proposals reasonable and not incompatible with my own. However, I think mine is a little more precise in pinpointing the problem at hand and its solution.

Goodman's suggestion to restrict induction from a proposition if such process yields conflicting conclusions is logically sound. Only his instruction cannot be obeyed preemptively, but only *after* we discover that the process yields conflicting conclusions. So it is not a preventative, as he seems to consider it, but an after the fact correction. It can therefore be regarded as about the same as the law of commensurate retraction I above propose. The only difference is that he does not seem to have made a distinction between the conflict of generalities and the underlying leftover particulars.

As for "non-projectible predicates", I would agree that negative terms (complements) present a general problem in induction. Although deductive logic makes no distinction between positive and negative terms, phenomenology does distinguish between the presence of positive phenomena and their absence. Whereas we can observe a positive phenomenon (like a black raven) without regard to its negation, we cannot mention a negative term (like non-black or non-raven) before thinking of and looking for the corresponding positive phenomenon and failing to find it.[52]

Thus, a truly negative term can never be truly empirical. Its content is never 'I have seen something', but always 'I have diligently looked for something and not found it'. A negative is 'empirical' in a lesser, more derivative sense than a positive. It already involves a generalization of sorts, from 'could not be found' to 'was not there to be found'.

It follows from this insight that generalization from negative terms, such as Some nonB are nonA, can only proceed with unusual caution and skepticism. Hempel's scenario further justifies such tentativeness. We are might even be tempted as a radical solution to simply always interdict generalization for a truly negative subject. If any manner of discourse has certain likely illogical consequence, logicians are wise to formulate a preemptive law of logic of this sort.

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[52] See my essay on this topic in *Ruminations* (part I, chapter 9).

Another temptation is to deny any meaningful content to propositions of the form Some nonB are nonA. Such a proposition is formally implied by All A are B, and compatible with Some A are B, No A are B and Some A are not B – but does it really tell us anything? Indeed, since nothing can be inferred about A or B (as subjects) from Some nonB are nonA, what information does such a proposition contain? Could one not conceivably assert such a proposition using any almost two terms taken at random? This sort of doubt could be used to further justify interdiction of generalization from such propositions.[53]

However, since a less radical solution, namely the above-proposed law of commensurate retraction is possible, we perhaps need not go so far. Rather than preemptively forbid certain doubtful processes under all conditions, I prefer to allow them in case they occasionally work, and prepare the appropriate corrective mechanism for when they fail to work.

To sum up, I believe we have convincingly shown here that Hempel's so-called paradox does not present the science of logic with any insuperable difficulty; it is made out to be a bit more daunting than it really is. Even so, it is an interesting contribution for logicians to ponder over.

[53] These questions are made clearer if we consider the eventual negation of Some nonB are nonA, i.e. the form No nonB is nonA, which implies All nonB are A. In the event the latter proposition is true, we would have a negative term (nonB) included in a positive (A). This could be taken to mean that almost all the world (except things that are B) falls under A. For this to happen, A would have to be a very large concept. Such a concept would be very exceptional and almost meaningless. Whence, we can say that Some nonB are nonA is almost always true, and at the same time not very informative.

9. Goodman's paradox of prediction

Nelson Goodman[54] proposed in 1955 a "riddle of induction" (as he called it[55]) or "paradox of prediction" (as others have characterized it), which seemed to demonstrate a formal difficulty in generalization. This may be stated as follows:

> "Goodman … introduce[d] the color grue, which applies to all things examined before a certain time *t* just in case they are green, but also to other things just in case they are blue and not examined before time *t*. If we examine emeralds before time *t* and find that emerald *a* is green, emerald *b* is green, and so forth, each will confirm the hypothesis that all emeralds are green. However, emeralds *a, b, c,* ... etc. also confirm the hypothesis that all emeralds are grue. In this case emeralds *a,b,c, …* examined after time *t* should be grue, **and therefore blue**!" (Emphasis mine)[56]

The significance of this artifice, according to its proponents, is that although green and "grue" have the same linguistic form, and so should be subject to the same logical processes (in this case, the inductive process of generalization), they are internally quite different types of concepts, since the first implies a similarity between its past and future instances, while the second suggests a change of color over time, so that the result is paradoxically quite different if we generalize with reference to the one or the other.

However, as I shall now formally demonstrate, this is merely a sleight of hand, for though the act of generalization is equally valid for green and for grue, it does not follow that we can infer any emeralds to be blue from the induced general proposition that all emeralds are grue. That is to say, the conclusion "and therefore blue" in the above presentation is an erroneous deduction.

To expose this simple error, the given scenario must be reformulated more carefully (the symbols X, A, B, C are mine):

- Say we examine all available emeralds (X), till a certain time (t), and finding them all to be green (A), we ordinarily conclude by generalization that All emeralds are green (All X are A), although we know [from past experience with induction in general] that the next

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54 USA, 1906-98.

55 Or more pretentiously, "the new problem of induction".

56 Here I'm quoting: http://en.wikipedia.org/wiki/Nelson_Goodman. Elsewhere, we are informed that "applies to all things examined before *t* just in case they are green but to other things just in case they are blue" is Goodman's own wording in his original presentation in *Fact, Fiction, and Forecast* (http://en.wikipedia.org/wiki/Grue_%28color%29).

emerald we find, after time t, might well turn out to be blue (B) [or indeed, to be some other color[57]]!

- Let us now following Goodman introduce a new concept "grue" (C) to be defined as the class grouping all things that were examined before a certain time t and found to be green (A) and all things *not* examined before time t which happen to *be* blue (B) [or indeed, to be some other color].[58]
- Applying this definition, all X (emeralds) examined before t were found A (green) are also C (grue); i.e. by syllogism we can infer Some X are C. As for remaining eventual cases of X, those not examined till after time t [if ever], *each will either be found be to be A (green) or to be B (blue) [or indeed, to be some other color]*; in that sense, the latter X too are C. Hence, All X are C would seem a reasonable conclusion.
- But it certainly does not logically follow from the preceding that any emeralds will indeed be found to be any color other than green, i.e. that any X are B [i.e. blue, or whatever non-green color]! For, properly understood, the category C is *not* formulated as a disjunction of A or B that is bound to actualize both some cases of X-A and some cases of X-B.
- If you look closely, you will see that C includes on the one hand things already *known* to be A (green emeralds already observed) and on the other hand a palette of things of still *unknown* qualification, i.e. either A or B (blue) [or even some other color]. The latter is a disjunction of *conceivable* outcomes, not one of *inevitable* outcomes. To infer X-B as an *actual* outcome would therefore be a *non sequitur*.
- The fact that we do not know whether any future X will be found A does not allow us to infer from this disjunction of possibilities that some future X will necessarily be B. We do not yet know whether any future X will be found B, either. We may well find that All X are A (All emeralds are green) remains forever applicable after time t as before time t (as predicted in the initial ordinary generalization).
- The premises 'All X are C' and 'All C are A or B' indeed yield the syllogistic conclusion 'All X are A or B'. But the disjunction 'A or B' here cannot be interpreted differently in the major premise and in the conclusion. The disjunction in the premise not being extensional, the disjunction in the conclusion cannot be treated as extensional[59]. To do so would be to commit the fallacy of four terms.

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[57] This is my own interpolation, to make Goodman's thesis more accurate. For there is no reason to suppose a priori that only blue emeralds might eventually be found. We are only guessing the possibility of blue emeralds, not basing it on any specific observations – therefore any other color is equally probable (or improbable). Nevertheless, my refutation of Goodman works just as well without this added comment.

[58] Note that the latter things are stated to be merely "not examined until time t [yet, if ever]"; this is not to be confused (as some commentators have done) with "examined after time t", for no matter how many things we do eventually examine, we will obviously never achieve (or know we have achieved) a complete enumeration of all such things in the universe. Note also that the concept grue is here defined as a general predicate for any eventual subject ("things"), rather than specifically for emeralds.

[59] That is, a base of the given disjunction is Some C *might be* B, whereas the corresponding base of the allegedly inferred disjunction is Some X *are* B. But to imagine something happening is not proof it has to in fact happen sometimes. The conclusion does not follow from the premise.

It is thus clear from our exposition that *the introduction of the concept "grue" has changed nothing whatsoever in the inductive possibilities offered by the given data*. The correct inductive conclusion remains unaffected by Goodman's fun and games. All Goodman has succeeded in doing is artfully conceal his fallacious *deductive* reasoning (misinterpretation of the kind of disjunction involved); it is all just sophistry.

In the thick smoke of Goodman's rhetoric, it is made to appear as if blue emeralds are as easy to predict as green ones. But that is not at all the logical conclusion according to inductive logic. Why? Because in the case of the hypothesis that future emeralds observed will be found green, we have some concrete data to support it, namely that all present and past emeralds observed have been found green.

Whereas, in the support of Goodman's hypothesis that blue emeralds will appear, we have no experiential evidence whatever so far. All we can say is that it is not inconceivable that blue emeralds might one day be found, but that does not imply that any ever will. 'Not inconceivable' does not justify actual prediction. It just means 'imaginable in the present context of knowledge'.

That is, all we have is a general epistemological principle to remain open-minded to all eventual outcomes, based on past experience relating to all sorts of objects, that novelty does appear occasionally. But such scientific open-mindedness is not equivalent to a positive prediction of specific changes. It is just a call, in the name of realism, to avoidance of prejudice and rigidity.

A question we ought to ask is whether Goodman's "grue" construct is a well-formed concept?

An ordinary concept of "grue" (or green-blue) would simply be formulated as "green and/or blue". We may well find it valuable to introduce such a concept, perhaps to stress that green and blue are close in the range of colors, or that some things are partly green and partly blue, or sometimes green and sometimes blue, or that some hues in between are hard to classify as clearly green or clearly blue. The dividing line between these colors is after all pretty arbitrary.

Given that some emeralds are green, we could then deduce that some emeralds are grue. It would be equally valid to induce thence that all emeralds are green or that all emeralds are grue. This would imply no inherent self-contradiction, because to say that all emeralds are grue does not imply (or exclude) that any emeralds are blue. All emeralds are grue is formally compatible with the eventuality that all emeralds are green. So there is no "paradox of prediction" in fact.

Goodman's "grue" construct is no different from this ordinary concept with respect to such logical implication. Its difference is not in the involvement of disjunction (green or blue), since such disjunction is quite commonplace; for example, the concept "colored" means (roughly) "red, orange, yellow, green, blue, indigo or violet". The significant difference in Goodman's construct is its involvement of temporal-epistemic conditions. This serves the rhetoric purpose of clouding the issues.

Defining the concept "grue" as the class of all things examined before time t and found to be green and all things *not* examined before t that happen to *be* blue – involves a self-contradiction of sorts. If I have not yet examined the things after time t, how can I positively say of any of them that they are blue? I could only make such a statement *ex post facto*, after having examined some of the things after time t and found them blue.

Alternatively, it would have to be said *by a 'third party' looking on*, who has examined some of the things before time t and found them blue, and who is observing my situation before I have done the same. But as regards all current observers taken together, they cannot logically adopt such a hypothesis, about things that happen to be blue although they have not yet been observed to be so. We can only consistently talk about things that *might yet* be found blue. For this reason, Goodman's grue concept is not well-formed.

Grue is primarily defined as the union of green things and blue things; but it does not follow from such definition that if some things (such as emeralds) are green, then other *such* things (i.e. other emeralds) must be blue. To say that a kind of thing (emeralds) is grue is not to intend that its instances must cover the whole range of possibilities included under grue. The concept of grue remains legitimate provided we find the predicates it collects together (green, blue) scattered in various kinds of thing (emeralds, the sea, etc).

Thus, every ordinary predicate involves some uncertainty as to its application to specific subjects. Moreover, this applicability may vary with time: according to our context of knowledge, and according to changes occurring in the objects observed. Therefore, there is no need to involve such epistemic and temporal factors in the definition of any of the concepts we propose. Such factors are inherent to conceptualization.

The reason Goodman introduced such complications in his definition of "grue" was because he wanted to refute (or give the impression he was refuting) the process of generalization we commonly use to develop our knowledge on the basis of limited observation.

According to inductive logic, observing that some X are A, and so far seeking and not finding any X that are not A, we may generalize and say All X are A. This remains effectively true for us so long as we have no evidence of any X that is not A. Generalization involves prediction, i.e. saying something about cases of X we have not yet observed and maybe never will.

Goodman wished to demonstrate that we are equally justified in predicting a negative outcome (i.e. not A, e.g. B) as a positive outcome (i.e. A)[60]. He did not realize the logical *justification* of our generalizations[61]. We are not arbitrarily predicting that the cases of X we observe in the future will be A rather than not A. We are just sticking to *the same polarity* (A), because it is the only polarity we have any empirical evidence for so far. Comparatively, to predict *the opposite polarity* (not A, in this context) would be purely arbitrary – a wild assertion. Specifically for X, the first move has some empirical support, whereas the second has none at all.

Goodman simply did not realize this difference in justification between the two courses, though it is obvious to anyone who takes the time to reflect. He thus failed to apply the inductive principle that a confirmed hypothesis is always to be preferred to an unconfirmed one. Moreover, as we saw, in his eagerness to invalidate inductive reasoning, he committed one of the most elementary errors of deductive reasoning!

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[60] To do so, he needed to construct a concept that would include both A and notA, so that generalization could be formally shown to be able to go either way. However, since a concept including contradictories in non-informative, he included contraries, viz. 'A or B' (where B is not A). This slightly conceals the issue, but does not in fact change it.

[61] See my *Future Logic*, chapter 50.

Underlying Goodman's riddle is another important question for inductive logic: how far up any scale of classification can generalizations legitimately be taken? Having for a given subject generalized a certain predicate, why not generalize further up the scale to a larger predicate?[62]

Consider a subject X and any two predicates S and G, related as *species and genus*, i.e. such that all S are G but not all G are S (i.e. some nonS are also G). Here, note well, S and G are both ordinary concepts, like green and colored.

- If all cases of X that we have observed so far are found to be S, and we have looked out for and not encountered any X that are not S, we may inductively infer that All X are S. This generalization remains valid so long as no cases of X that are *not* S are found; but if any X-nonS eventually do appear, we are required by inductive logic to revise our previous judgment, and particularize it to Some X are S and some X are not S. For induction proceeds conditionally[63].
- The same reasoning applies to G[64]. Alternatively, granting that All S are G, we can from All X are S *deductively* infer that All X are G, by syllogism (1st Figure, AAA). Thus, we might postulate, if we are justified to generalize, for a given subject X, as far as the specific predicate S, we are also justified to do so higher still on the scale of classification, as far as the more general predicate G. This is logically okay if properly understood and applied.
- However, it would be a gross error of judgment[65] to *infer* from such valid generalization that there might be some X that are G but not S (even if we know there are *things other than X* that are G but not S). At this stage, the actual content All X are G is identical (in extension and implicitly in intension) to the All X are S from which it was derived[66]. How the two statements differ is only with regard to eventual corrective *particularization*…
- Suppose tomorrow we discover *an X that though still G is not S* (for example, an emerald of some color other than green). In such event, we would have to particularize the first

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62 I have touched upon this topic (indirectly, with regard to ethical logic) in my *Judaic Logic*, chapter 13.3.

63 For adduction or generalization is justified by *two* essential principles: (1) confirmation of a hypothesis by a positive instance, and (2) the non-rejection of the same hypothesis by any negative instance, and *both* principles must be equally obeyed for it to proceed logically. There are of course many other conditions involved – see my essay "Principles of Adduction" in *Phenomenology* (chapter VII.1).

64 That is, given Some X are G (or deducing this from Some X are S), we can generalize to All X are G, provided there is no known negative instance (X-nonG) to belie it.

65 This is as we saw one of the errors Goodman committed in formulating his "riddle". This error is of a deductive rather than inductive nature.

66 This is obvious if we consider that we may equally well obtain All X are G: (a) by generalization from Some X are G, which we deduce from Some X are S, or (b) by deduction from All X are S, which we generalize from Some X are S. In truth, it could be argued that these two are slightly different, since (a) requires that we make sure that there are no instances of X that are not G, whereas (b) requires that we make sure that there are no instances of X that are not S. This difference is however brought out in the ensuing stage of eventual particularization.

(more specific) statement to 'Some X are S and some X are not S'; but the second (more generic) statement 'All X are G' would remain unchanged.[67]

- But as a result of such particularization All X are G has *a vaguer meaning*, since G no longer for us refers only to the S species of G but equally to some other (nonS) species of it. Thus, though the inductive rule would be to generalize as far up the scale as we indeed can go, we must keep in mind that the further up the scale we go, the more we dilute the eventual significance of our generalization.[68]

Thus, although in principle generalization up the scale is unfettered, in practice we proceed relatively slowly so as to maintain the noetic utility of our ideas and statements. To give a formal example: the proposition All X are S might be used as minor premise in a syllogism where S is the middle term, whereas the proposition All X are G – even if still identical in extension and intension to the preceding – would be useless in that same context (i.e. with S as middle term).

Moreover, to regard All X are G as a more profitable generalization than All X are S, in the sense of providing us with information about more things for the same price in terms of given data, signals a confusion[69] between generalization for a given subject from a narrower predicate to a wider predicate, and generalization of a given predicate from a narrower subject to a wider subject.

The latter case is the truly profitable form of generalization. Suppose All X are P, and Y is an overclass of X (i.e. All X are Y, though not all Y are X), then this would consist in inducing that All Y are P — of course, unless or until some Y that is not P is discovered. The rules of such generalization are dealt with fully in my work *Future Logic* under the heading of Factorial Induction (Part VI).

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[67] Note that if we discover an X that is not G, it is necessarily also not S, given All S are G. In that event, both general propositions would of course have to be particularized.

[68] In this context, we could compare Goodman's "grue" concept to Feynman's concept of "oomph". The latter, defined (tongue-in-cheek) as "a kind of tendency for movement" might seem useful to "explain" various phenomena, but it is so vague that it cannot predict anything and is therefore worthless (p. 19).

[69] Which Goodman was guilty of in formulating his "riddle", incidentally.

10. The induction of induction

The above two recent attempts to emulate Hume were both by renowned writers and professors in prestigious universities. Looking at their messy treatment of induction, one may well wonder why[70]. In truth, they were just following a modern trend. After David Hume in the 18th Century, on the basis of a very fragmentary appreciation of induction, put in doubt various aspects of human knowledge, many have tried to expand and intensify that skeptical assault. He was immensely influential on subsequent philosophy, starting with Kant's[71].

The myth that Hume's reasoning against induction, causation and many other basic human beliefs was unassailable persists to this day, perpetuated by many philosophers and teachers who do not make enough effort to reflect, or maybe lack the requisite intelligence. In this manner, philosophy is held back generation after generation, weighed down by people who unthinkingly cling to what they were taught and in turn mutter the same mantras in pursuit of dubious cleverness and reflected glory.

a. My first reaction (perhaps somewhat emotional) to this modern trend is the following sermon on professional ethics for philosophers.

The role of the responsible philosopher or logician would, one would think, be to give methodological support to the enterprise of human knowledge, and justify, increase and improve available means. But such a constructive role requires a lot of careful thought, a lot of tiring work, and most people find it easier to tear down than build up. Skepticism is thought by many to be modern-minded, but I rather detect a resistance to progress in it.

That is not to say that the writings of skeptics like Hume have been without value to the development of logic and philosophy. To the contrary, they have often stirred up more thought and discovery than more apologetic writers could have done. By creating epistemological insecurity, however fallaciously, the skeptics have stimulated more imaginative and profound counter-arguments than were hitherto needed. Thus, many of them deserve their prominent place in history, even if not for their own effort.

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[70] I am being a bit sarcastic here, for the sake of argument. These men did of course make significant contributions. For instance, Carl Hempel was at one time a member of the Vienna Circle; later on, he wrote an essay refuting the "verifiability" theory of meaning (a pet theory of that group) by pointing out the theory itself could not be "verified" empirically as it demanded, and so had to be considered as meaningless (see Yourgrau, p. 166). Regarding Nelson Goodman, see for instance his valuable comments on Hempel's paradox.

[71] Although Kant is not ordinarily regarded as a skeptic, because he tried to build an elaborate system of philosophy, the unbridgeable gulf between things in themselves and things as they appear that he set up is in fact a sort of skepticism, for it denies us access to reality and limits us to mere appearances. Kant effectively took Hume's skeptical analysis of knowledge for granted.

Of course, too, it would be unfair to characterize them as *only* skeptical. Many of them have made considerable or even great positive contributions to human understanding in general and philosophy in particular. They had great intelligence, deserving of our admiration, respect and gratitude. Credit must be given where it is due.

I am not, needless to say, advocating that their works be thrown away. Every philosopher – even one with many errors, even one who deliberately misleads – is philosophically interesting as one possible expression of the human mind, and historically important to keep and study as such. The history of philosophy is, and has always been, an integral part of the philosophical enterprise[72]. That is because the history of philosophy provides us with raw data on actual philosophizing.

Nevertheless, they are guilty of having sown considerable confusion in many ordinary people's minds. To be sure, an uncritical mind is epistemologically undesirable; discursive knowledge cannot progress in a trusting simpleton, questions must be asked before answers are proposed. But equally undesirable, is a mind prone to excessive doubt; this is a sort of mental illness, a neurosis. A healthy mind finds a middle ground between these extremes: it looks for intelligent questions to ask, but it also seeks to find intelligent answers to them.

An important component of the scientific method of thinking is to look for holes or difficulties in any proposed theory about anything. Criticism is a cognitive virtue, and is what makes thought progress[73]. So the point here being made is not that the skeptics are viciously destabilizing us all, but only that their spirit in doing so is not scientific. For if it were so, they would make a lot more effort to check the formal validity and empirical ground of their own thinking. They are quick to criticize others, but do not readily turn the same sharp sword on their own ideas.

As I have again and again demonstrated, when one looks closely at the ideas and criticisms of prominent skeptics, one finds rather obvious faults in their reasoning and observations. The impression one gets is that they were so eager to find fault with common reasoning, that they made no effort to double-check the validity of their own discourse. They asked questions, but did not sufficiently try to answer them. Their curiosity did not stretch far enough; they quickly got proud or lazy, and missed out on valuable new insights.

This raises the suspicion that some of them had some destructive motives in mind: they *wanted* to invalidate human knowledge. Some people feel resentment towards people or society or life or the world or God, and want to hit back. Some people yearn for nonsense and nihilism, ultimately because they wanted to justify their freedom from moral restraint or compulsion; if reason is shown to be baseless, they reason, then anything goes, we can do as we like!

In other cases, the motive was perhaps less sickly, a mere desire for fame or even notoriety. For in view of Hume's success, skepticism has become fashionable in many intellectual circles. Many people think it is proof of intelligence, whereas it is in fact evidence of intellectual weakness. Many people are conformists, and allow a person's praise in the media and so on to affect their judgment of him.[74]

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[72] Much more than, say, the history of biology is a part of the science of biology.

[73] See for instance: Feynman's comments to the same effect, p. 27.

[74] What perhaps is most astonishing and annoying is that once a philosopher has acquired sufficient fame, then no matter how thoroughly and often his work is discredited, people continue to

Many philosophers and logicians have, of course, more healthy motives and goals. My own writings, by the way, constitute a constant attempt to inaugurate a new, constructive attitude.

Human knowledge can indeed be understood, validated in principle, and further developed, if philosophers and logicians adopt a more healthy-minded, positive attitude. Just as doctors or engineers are not rewarded merely for diagnosing problems, but for proposing solutions, so should it be for philosophers and logicians. The real test of intelligence and respectability ought to be constructive rather than destructive abilities.

b. Upon further reflection, my reaction to the anti-inductive trend set by Hume is more muted, as follows.

Deductive logic was largely the discovery and production of one man, Aristotle (who, of course, had a great teacher, Plato). It has grown considerably since then, thanks to the contribution of many, but its founder's work is still very present at its foundation. Of course, people engaged in deduction before him, but he brought an enormous amount of self-consciousness and precision to such logical thought. Under his direct influence, many people made fewer errors of deduction.

On the other hand, what *the history of the logic of induction* makes clear is that this basic discipline was not born long ago and in one go. Retrospectively, we can of course say that induction has always been used by humans, and even in a sense by their animal forbears and cousins. We have always practiced induction, with more or less effectiveness, without need of logicians and philosophers to describe and explain it.

Aristotle and his successors were of course conscious of induction to some extent, but not sufficiently to develop a systematic theory of it. The theory of induction dawned in more modern times, with (I would say) Francis Bacon. The latter's work was more important than many realize. After him, whether under his influence or independently, physical scientists like Galileo, Newton, and many more till this day, both used and understood induction with increasing clarity.

On the other hand, the direct philosophical successors of Bacon, like Locke, Hume, and many others till today, never quite succeeded in bringing the logic of induction he had started up to date[75]. In some respects they even regressed, rather than progressed. It is really surprising just how widespread skepticism about induction remains. Hume seems to have permanently impressed his disbelief to a great many later thinkers.

To give you one modern example, two hundred years after Hume – A. J. Ayer reports that Bertrand Russell thought that the assumptions of scientific thought had to be taken on faith, and that (in Ayer's words):

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admire him. He is taught in universities, made the subject of laudatory documentaries, and so forth. Unfortunately, it is so that people's credulity too often relates more to appearances than to substance. This is especially true in philosophy.

[75] While scientists were showing enormous ingenuity in the design of experiments and more broadly in the formulation and selection of theories in their respective fields, the general understanding and justification of induction by philosophers and logic specialists have often lagged far behind. In modern times, the likes of Karl Popper have of course brought greater balance between the theory and the practice of induction.

> *… there is no necessity other than logical necessity, so that there is no such thing as causal necessity. Causality is just a matter of what Hume originally said it was, namely constant conjunction, and is something purely contingent.*[76]

Ayer agrees with him. Many other philosophers and logicians similarly assume induction to be without any solid logical basis, and express surprise that it works at all. It is not that they have some bias against inductive reasoning; they would dearly love to prove it, because they are empiricists at heart and supporters of modern science. What the example of Russell makes evident is that they are sincerely baffled.

All this teaches us an important lesson. It is that *the induction of a theory of induction* has taken time, a lot more time than anyone would have thought it would take. And this is quite normal and okay – the question is not simple, so we should not be too surprised that many have failed to answer it satisfactorily. After all, induction is a trial *and error* process. It allows for error, and for long spells of blindness and incomprehension.

The history of science is replete with similar situations[77]. Certain facts were (it seems to us, retrospectively) glaringly obvious, yet scientists went through great pains till they saw them. Many facts were for long periods devoid of explanation. Similarly, in the history of logic, although Bacon had well specified and stressed the importance of the negative instance in induction, Hume just ignored the advice in his formulations on induction and causation.[78]

Thus, after due consideration, we should look upon Hume and similar skeptics without bad feelings, with compassion. The modern discovery of induction and the attempts to formulate a theoretical description and justification of it – were all part of a learning process. If many found it difficult, and drew hasty defeatist conclusions, they ought not be blamed. They did their best, albeit without too much success. We are all fallible and none of us all-knowing.

Letting bygones be bygones, now the task is to educate people, to teach the principle of induction and all the methods that derive from it. Enough of negativity, skepticism and pessimism; let us not perpetuate these historical faults. Instead, let us inaugurate a new era of general mental health and good intentions.

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[76] See Magee, pp. 313 and 315.

[77] Stephen Jay Gould documents many such stories and gives us illuminating methodological comments on them, in a set of essays I strongly recommend. See for instance his comments on pp. 96 and 97, on the “long struggles to think and see in new ways” and on “shining a light of logic into the most twisted corners of old conceptual prisons, into the most tangled masses of confusing observations”.

[78] It is a bit shocking to discover, upon close scrutiny, just how often errors of reasoning and plain ignorance occur in Hume’s work – and indeed in the work of many other great and lesser princes of Western (and for that matter, Eastern) philosophy. I remember my similar surprise and disappointment when, after completing *The Logic of Causation*, I revised my analysis of J. S. Mill’s “methods of experimental inquiry”, and discovered how many mistakes a very educated and intelligent man like him could make.

11. Descartes' mind-body dichotomy

David Hume's skepticism was in part due to the 'mind *versus* body' dualism that Descartes' philosophy produced in Western thinking more than a century earlier. Indeed, its roots are much deeper than that, traceable to Christian thought and earlier still to Greek thought. But within modern philosophy, Descartes was certainly a source of much (unintended) confusion and contention, as well as of (intended) enlightenment in a true sense.

René Descartes[79] considered his mind to be the most knowable of his beliefs, and sought to infer an external world including matter from such introspection. Using reasoning similar to St. Anselm's ontological argument, he first inferred God from his own mental existence; and then inferred the rest of the apparent world from God. God, being necessarily an honest broker, was to be the guarantor that human knowledge could extend out to the external material world.

Descartes' motive in this tortuous construct was primarily epistemological: he wished to establish the validity in principle of human cognition. However, this particular way of looking at things became a problem for subsequent philosophers – for it seemed to imply an ontological radical chasm between mind and body. One could know mind directly and certainly, but body only indirectly and uncertainly. Some philosophers began to doubt that mind and body could be claimed to have any causal relation whatever. 'Being so substantially different, how could either domain be said to cause changes in the other?' – so they argued.

Now, this whole problem, or set of problems, is a figment of these philosophers' imaginations. It is a mystification, a fanciful complication. It is safe to say that it was not Descartes intention to set up a dichotomy between mind and body; he was on the contrary attempting to harmonize them, first epistemologically and thence ontologically. His presentation of the issues was not perfect; but it was an honest try that can be improved.

Phenomenology. Descartes first mistake was to effectively *start with* the common sense distinction between mind and body, or a mental domain and a bodily one. The mind-body distinction cannot reasonably be used as a starting point, for it is only an assumption, a construct. Armed with this awareness, the apparent difficulty is easily resolved…

If we take a phenomenological approach to the issues involved, we realize that to begin with we have a mass of appearances, some of which may *seem* essentially different from others. We may then, as a hypothetical way of ordering the data, well assume that the seeming difference

[79] France, 1596-1650.

is significant, and label one set of appearances 'mental' and the other 'material' (or 'physical').

This is not done arbitrarily – but so as to organize our experiences, and explain why some are clearer than others, or why some behave somewhat more erratically than others, or why some seem to us more under our control than others, and so forth. So long as this hypothesis of substantial difference serves its useful purposes, it is maintained; but were it found logically or experientially inadequate, it would soon be replaced.

Such cognitive behavior is in accord with the *principle of induction*, which allows us, and indeed enjoins us, to rely on the suggestions of appearance unless or until they are specifically shown to be illusory.

Had Descartes proceeded thus, in a more phenomenological manner than he did, he would not have given *ab initio* precedence to mind over matter, or alternatively to matter over mind, but he would have treated both domains as appearances of equal initial status to be later sorted out, and no dichotomy would have arisen in the first place. Descartes was in fact trying to proceed in a phenomenological manner; but his meditation did not begin far back enough.

Were it not for this natural, *inductive* approach, the opponents of Descartes would have a hard time explaining how come they manage to at all discuss both mind and body. How do those who believe only in the mind know about or understand claims to the body? How do those who believe only in the body know about or understand claims to the mind? Obviously, both groups start with *the appearances of* both body and mind, and it is due to this that they can communicate and debate.

The self. Moreover, to speak of a mind-body dichotomy is inaccurate and misleading in other respects. Our experience apparently covers *three* domains, not two. In addition to the physical phenomena we seem to outwardly perceive through the senses, and the mental phenomena we seem to inwardly perceive, which we call memories and imaginations (the latter being reshuffled memories), we believe in a third factor.

This is the self – that within us which perceives and thinks about the other two domains. This self – which we most identify with, rather than the mental and physical phenomena that surround it – is also experienced. It is known not merely by conceptual means, but primarily by a direct cognitive means we call *intuition* (or self-knowledge – i.e. knowledge of the self by the self).

The self (or soul or spirit) may be defined as that which is conscious in various ways, exercises will and makes value judgments. Such acts or functions of the self are also known by intuition. The difference between objects of intuition (i.e. the self and its functions) and all mental and material objects of perception is that the latter are phenomenal (they have phenomenal appearances like color, shape, sound, touch, smell, taste), whereas the former are non-phenomenal.

We do colloquially lump together the soul and its functions (spiritual appearances[80]), mental phenomena (memories, imaginations – and derivatively, conceptual constructs), and some

[80] I use the word 'spiritual' in a very simple sense, meaning 'pertaining to the spirit'. Note also that the terms self, soul and spirit are to me identical – although some people believe in a self without a

bodily phenomena (the nervous system, including the brain and all sensory and motor functions) – as "the mind" (or, I prefer to say: "the psyche"). But such unification is a simplification and should not be taken literally in the present context.

Indeed, if we go back to Descartes' "I think, therefore I am" statement, we find in it three factors: "I" (the self), "think" (mental phenomena, supposedly observed by the self) and "am" (the inferred existence). Logically, the "being" inferred is just that of the self (and, though he does not say it, the mental phenomena of thought); but Descartes' tacitly intended implication is that there is a physical substratum to such existence, i.e. a body and more broadly a physical world.

Anyway, this is how the argument is usually understood, as an inference of body and matter from self and thought (mind). The reason being that only such physical existence is regarded as 'true' existence, while mental and all the more so spiritual existence are regarded as a merely 'virtual' sorts of being. At least, this is the opinion implied by the proponents of a dichotomy between mind and body who have a materialist preference.

Those with more mentalist or spiritual propensities interpret the dichotomy as disproof of a material world. That is, they point out that Descartes' premise ("I think") does not logically imply any conclusion other than "I and my thought exist" – so that the usual inference that body and matter therefore exist is a *non sequitur* (it does not follow). Their error, of course, is to accept Descartes' approach – whereas, as already shown above, the correct phenomenological procedure is not quite as he proposed.

Causality. As for the "law of causality" which some critics propose, that the domains of mind and body are so 'substantially' different that they cannot conceivably impinge on each other – this too is a figment of biased imagination. What do they base this alleged law of causality on? If we consider the concepts of causation (deterministic causality) and volition (causality through will)[81], we find no basis for a 'law' that the substances of cause and effect must be the same. Such a law might conceivably be proposed as a hypothesis; but why do so, if such a hypothesis gives rise to intractable difficulties?

Causation can be formally defined with reference to terms of unspecified substance. For instance, the strongest form of causation between two items C and E can be defined as "if C, then E; and if not C, then not E". Such a formal statement can be applied to any pair of items, even if one is mental and the other is material or vice versa. There is no justification refusing to apply the definition to cases where the terms refer to different substances.

With regard to volition, it is important to clarify the issues and not lump everything together. We can (in a first phase, at least) refer to our common sense beliefs for guidance, again on the basis of the earlier mentioned principle of induction.

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soul or spirit, namely Buddhists (on the one hand, who regard the self as 'empty') and Behaviorists (on the other hand, who identify the self entirely with the perceptible phenomena that most people consider as its mere effects).

[81] See my works *The Logic of Causation* and *Volition and Allied Causal Concepts* for detailed treatments of those concepts.

These include that the self (soul) can will some mental events (e.g. some imaginations) and some material events (e.g. some physical movements of the body)[82]. It can do so (as introspectively evident) in its own mind and body – and also indirectly, in other minds and bodies (at least through its physical acts, if not in some cases through its mental acts).

Conversely, the self might be *influenced* in such mental or physical acts of will by mental and/or physical things *of which it is conscious*, or it might be *causatively* affected by such things (i.e. they might deterministically limit or widen its power to act).

An 'influence' functions through consciousness, and increases or decreases the ease or difficulty of a volitional act, but does not determine it; the act remains free, if the agent of it (the willing self) puts sufficient energy (will) into it. A 'causative', on the other hand, functions even if unbeknownst to the self, and does not affect the volition as such, but either delimits or enlarges its scope. All this is quite consistent, and no logical objection can be raised against it as an aetiological hypothesis.

Thus, in the direction from body to mind, we believe that mental objects (like sensations and memories) can arise from material causes; and that either (in some cases) through the influence of those objects when perceived or (in other cases) more directly through causation, the self's acts of will and other aspects of behavior may be affected.

Conversely, in the direction from mind to body, we believe that the self has a power we call 'will' that can affect the body, either indirectly via events it produces in the mind that in turn causatively affect the body, or directly by producing changes in the body. Such effects of the will can in turn affect other bodies and minds.

We certainly have much introspective data on which to base these beliefs. These have the phenomenological status of appearances, i.e. the minimal credibility granted to all appearances initially. We are free, according to inductive logic, to use this database to build up a consistent intelligent theory of what is going on, provided we do not thereby create unsolvable problems.

Inversely, critics of this commonsense view of events must provide equally or more credible evidence and arguments in support of their contention. They must not only, as they tend to do, merely deny – but must also explain by what means and on what basis they are able to at all discuss the issue and take the intellectual positions they take.

Materialism. Now, there is one problem that some consider especially unsolvable. It is that the commonsense theory of a self, with consciousness and volition, interacting with a world of matter, is inconsistent with the *exclusively materialist thesis* that there is nothing but matter in the world and that matter can only move within a deterministic framework.

People who adhere to the latter thesis, who flatteringly call themselves scientists, are willing to accept indeterminism to some extent, in the sense that this is understood within quantum mechanics or in the Big Bang theory – but they refuse any possible impact of a non-material

[82] I say 'some' mental and physical events, to stress that some (other) mental events are not caused by volition but by the brain (or whatever other means), and likewise for some (other) bodily events. The 'mind' and 'body' are domains affected by various causalities, and not by volition only or by causation only. There is no reserved domain either way.

soul on material processes. That, to them, would imply a breach in the universality of modern physical laws.

This problem is easily solved. The solution is simply that all the so-called 'laws' of physics are known by inductive means – through generalizations or through theories based on adductive arguments. Such general propositions or ideas are undoubtedly based on empirical observations; but they also *add to* these observations, and such additions might well in time turn out to be unjustified by further observations. True scientific propositions are not exclusively empirical – they also depend on reasoning.

This being the case, it is absurd to argue that, since these 'laws' do not allow for non-physical things having any impact on physical things, any suggestion of volition is invalid. That is simply *a circular argument – it begs the question*. They do not prove in any way that spiritual entities (our self or soul) cannot affect (not even via mental events) physical events; they *just assert* that it is so.

It is not a conclusion of theirs; it is a premise. It is not a conclusion of any experimental or mathematical proof, but a prejudice (proposed so as to simplify the world for their simple minds). It is a modern dogma, as closed-minded as past religious dogmas that science was supposed to replace.

What is evident to any lucid observer and honest thinker is that the apparent universality of all these physical laws is made possible because their proponents *do not address* the introspective data at all. They ignore (i.e. discard, refuse to even consider) data that does not fit into their materialist way of looking at the world, and they call this 'science'.

But science strictly means *using stringent cognitive methodology*: i.e. logic, inductive and deductive; it is not reserved to a materialist thesis. No such dogmatic reservation is philosophically ever justified or justifiable.

12. Some further remarks on causal logic

The following notes are intended to amplify my past writings on causality.

The fallacy of reductionism. In my research on the logic of causation, I established that "a cause of a cause of something is not necessarily itself a cause of that thing" (see list of valid and invalid causative syllogisms for the precise conditions when this applies and when it does not).

It occurs to me that this result can be interpreted as *a formal proof that "reductionism" does not always apply*.

When we try to 'reduce' something to its constituent parts, we are saying that the laws that apply to the parts ultimately apply to the whole; i.e. we are saying that the whole is no more than the sum of its parts. This is sometimes true, but it is not always be true. It is true when the following syllogism is valid, and untrue when it is not.

Y causes Z, and

X causes Y,

therefore, X causes Z.

In some cases, I say, though the whole (Y) have a certain property (Z), it does not follow that the part (X) has that same property (Z). In such cases, the whole may logically be said to be more than the parts. For example, though the whole of a live human organism has consciousness and volition, it does not follow that any of its parts has these powers.[83]

It should be added that this insight of causal logic is valid for all modes of causation. That is, it can be equally said of natural, extensional, spatial, temporal, or logical causation. Thus, reduction or irreducibility has as many senses as there are modes of modality. It follows that something may be reducible in one sense, but irreducible in another.

We thus have, precisely listed in my work *The Logic of Causation*, the formal rules for impartially settling debates about reduction in specific cases. Reductionism is sometimes applicable and sometimes not; and we have a way to tell just when it is and when it is not. Reductionism is a fallacy, note well, not because all reduction is fallacious, but because reduction is in some cases fallacious.

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[83] See also for example, Gould, p. 283.

Incomplete listings of causes. It should be added that the above schema is not the only way reduction occurs fallaciously. Sometimes, reduction consists simply in declaring a number of things to be partial or alternative causes of a phenomenon. The possible fallacy in such cases consists in *incomplete listing of partial or possible (i.e. contingent) causes*. Even though the things proposed as causes are indeed causes – the list proposed is incomplete. The effect of such too-short listing is to narrow our vision and multiply our wrong causal judgments. That is why we must call it a fallacy: because it makes us reason wrongly.

For example, the expression "nature or nurture" is usually understood as signifying that the causes of physiological and psychological phenomena are genetic and/or environmental[84]. But there is a *third* possibility or partial determinant: viz. volition. Volition signifies personal choice and effort, self-generated change; it is quite distinct from and even antithetical to physical and mental causations. To omit it from the list is to bias judgment away from it, towards more deterministic biological and psychological forms of explanation.

This missing disjunct might be generously understood as implicit in the others, but in truth it is not so. Often, when people speak of nurture, they have in mind the influence of other people – for instance, parents and teachers in the learning process. This is indeed 'nurture', though we must keep in mind that it refers to acts of volition by other people, which influence the volition of the subject. However, to think in such terms alone puts insufficient emphasis on the subject's will – in this instance, the subject's will to learn. To classify this too as 'nurture' would be inappropriate. It is definitely a third factor, viz. personal choice and effort. Thus, we should always speak of "nature and/or nurture *and/or volition*" when explaining human behavior.

Note that the disjunction "genetics and/or environment" is even worse than "nature or nurture", because the word 'environment' need not imply any human interference at all, whether that of others or one's own. It connotes the effects of the weather, food composition, agents of disease – anything but human action. The choice of this word is rarely accidental. There is a tendency among many modern scientists (biologists, physicians, psychologists, etc.) to deliberately avoid any explicit mention of volition in their explanations. They think that mention of volition would make their discourse unscientific, and are afraid to lose credibility among their peers. So even if they think of volition as a relevant factor, they keep all references to it tacit. Such discursive behavior is not honest or intelligent.

A common causal argument. Quite incidentally here, while on the topic of causal logic, when we say that something (X) is the causative of something else (Y) *in an individual case*, we mean that from all the possible causes of Y *in general*, the cause X is in this case the one applicable. For example, to say that John died of a heart attack, we need only verify that John's heart had a serious enough problem, and no other possible cause of death occurred in this instance; and thus, by demonstration and elimination, we conclude that John died of a heart attack.

This is stated in support of the claim already made that causation always relates to *kinds*, not to individuals. When we identify causatives in individual cases, we are not identifying the general fact of causation, but its particular *application* to a given instance. Thus, in our

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84 See for example, Gould, p. 288.

example, we know from general scientific studies that a human being can die from a variety of causes. When a particular human being dies, and we wish to know "the cause of death", we use our general knowledge in disjunctive form as the major premise in an apodosis with an appropriate minor premise concerning the individual case.

The argument runs as follows:

> Death in a human being may be caused by heart failure, or cancer, or… etc.
>
> In John's case, we found some evidence of heart failure, and no evidence of any other possible cause of death.
>
> Therefore, John (probably) died of heart failure.

Of course, this argument may be found erroneous, if it turns out that the list of causes of death is incomplete, or if it is found that certain other problems in John had not been spotted. For this reason, it is wise to qualify the conclusion as only probable, in the way of reminder of the inductive assumptions behind the deduction.

Positivism may be viewed as a thesis going in the opposite direction to reductionism, or putting a stop to the urge to reduce. It is a (sometimes arbitrary, sometimes wise) refusal to dig any deeper or look any further for underlying causes or explanations.

An example is the Heisenberg principle of uncertainty. This is regarded by some philosophers (notably Neils Bohr), somewhat arbitrarily (in the way of a concession to the 20th Century's *zeitgeist*), as an epistemological principle (implying doubt in our very ability to know, since our antennas of knowledge are limited in scope), whereas it is really no more than a principle of physics.

The wave-particle duality is often presented as an empirical refutation of the law of non-contradiction. But this is an unfair interpretation of events. The facts of the case are that an ongoing physical phenomenon may *in some circumstances* behave with the mathematical properties of a particle and *in other circumstances* behave with those of a wave. *The circumstances involved are certainly not one and the same*.

There is empirically no *actual superimposition* or 'interbeing' of wave and particle in the same respect, in the same place, at the same time, in the same perspective of the onlooker. The two states are clearly separated by space, time or other circumstances. Therefore, the law of non-contradiction is in fact never breached. Therefore, no epistemological or metaphysical difficulty arises.

The problem raised by the wave-particle duality is at worst merely rational: it is a surprising inability of our *theoretical* instruments, i.e. physics theory and experiment as well as mathematics, to fully predict and explain such goings-on of material phenomena.

Thus, we could say in rebuttal to the positivists of uncertainty that what prevents us from full knowledge at the quantum level is one or all of the following:

- Perhaps as they claim the physical world is really so roughly constituted that there are no finer levels of matter in this world than what we observe. In that case, our cognitive faculties are not to blame; the world is like that. But then, how can we know it for sure?

- Perhaps the world in fact has finer, deeper levels, but our sensory faculties and experimental instruments are inadequate to the task of detecting and measuring them. In that case, it is not inconceivable that more sensitive experiments be devised someday that do make physical detection possible, directly or (granting certain physics hypotheses) indirectly.
- Perhaps the mathematical tools currently at our disposal are inadequate. In that case, it is not inconceivable that someday we develop a mathematics sufficiently sophisticated to seamlessly unify the quantum phenomena observed.

Our faculties of perception and our intelligence are, it is true, *limited*. We might conceivably have had a sensory faculty strong enough to allow us to differentiate particles from waves, but we unfortunately do not. We might have found some indirect way to do so, but we did not – so far, at least. We might have developed a mathematical theory capable of dealing with the problems encountered, but we did not – so far, at least. In that sense at most, the uncertainty principle might be viewed as an epistemological statement.

But people who think thus forget that their conceptual faculties (though also not unlimited) have compensated this sensory and technical limitation, if only enough to realize the (currently apparent) truth of the uncertainty principle. Therefore, the problem is essentially factual rather than epistemological. It does not put in doubt human knowledge as such, but is an expression of it. Our knowledge is limited in scope, but not for that reason necessarily false.

It is important to emphasize in this context the modern tendency to infer an "is" from a "might be". This fallacy is evident in Bohr's inference from an uncertainty (as to what lies at a deeper level of matter than what we are 'on principle' – at the present development of physics, at least – able to observe) to a certainty of negation (i.e. to a certainty that there is nothing beyond). The same fallacy is found in Goodman's inference of blue (a specific color) from 'grue' (a range of possible colors).

The causation in 'fields of force'. Someone looking at the definitions and analyses of causation in my book *The Logic of Causation* might well wonder what all that has to do with the 'fields of force', like gravity, electricity and magnetism (to name just the more widely known), which are at the core of modern Physics theory. The answer to that question is already proposed in my *Judaic Logic*, Appendix 1.3.

We describe *the force at each point in a field*, around some central 'particle' or 'body' (collection of many and varied interacting particles), by means of if-then statements. These have roughly the form: "another body with such and such characteristics (e.g. mass, electric charge or whatever appropriate) placed at this point in that field (i.e. at a certain position relative to the central body concerned) will be subject to a force of magnitude and direction so and so, calculated using a certain quantitative formula (a hypothesis previously developed by inductive logic, e.g. an inverse square law)". Needless to say, this proposition is *merely descriptive*: it does not tell us why or how such (invisible and remote) force occurs at all – I leave this difficult question for physicists to answer!

Such if-then statements, which are *natural or extensional conditional propositions* in formal logic, are the underlying causal (or more specifically, causative) propositions analyzed in my causative logic work. It is important to realize that the causative propositions corresponding to

fields of force generally relate to *partial and contingent causation*, since forces may amplify or diminish each other (and in some instances cancel each other out). That is to say, the relation of force operative between two bodies, calculated by means of the pertinent algebraic formula, is applicable to them as is only granting that no other bodies are in their vicinity. It goes without saying that if more forces are involved at the same time, their net effect has to be calculated before we can correctly predict the subsequent motion (if any) of the body or bodies concerned.

Speaking of motion, can the motion emerging from fields of force be described as motion arising from rest? In my *Volition and Allied Causal Concepts*, chapter 8.1, I suggest that the generation of motion from rest is a distinctive characteristic of volition.

On the surface at least[85], fields of force would seem to belie this claim of mine. For example, hold a stone above the ground, then let it fall; or again, place two light magnets next to each other well at rest, and when you let them go they will either attract or repel. In such cases, acceleration from rest evidently occurs. Yet this is clearly different from what we suppose volition to do. In the case of gravity or magnetism (or other sorts of field-forces), the movement is preprogrammed, i.e. in the same circumstances it will always be the same in magnitude and direction. Whereas in the case of freewill, the same agent may in the same circumstances choose a different magnitude and direction of will. In the latter sense, volition truly initiates motion from rest.

Notice, too, that in the examples above given, volition was involved in bringing the stone or the magnets in their starting positions, and they were held momentarily stationary there by volition. The motion in these objects is as it were artificially held in abeyance; whence the physics concept of 'potential' energy. Motion is the main configuration of the natural world (the domain of deterministic causality, or causation), while immobility in it is due to a temporary balance of opposite forces. In the spiritual world (i.e. the domain of personal causality, or volition), in contradistinction, motion emerges occasionally and somewhat voluntarily from something essentially at rest.

Liebniz's 'pre-established harmony'. Hume's attempt to weaken the bond of causation can be rooted to some degree to the doctrine of 'pre-established harmony' found in the philosophy of Gottfried Liebniz[86]. This idea substitutes a sort of *parallelism* for the common concept of causation. That is to say, according to this doctrine, the putative cause and effect *just happen to* regularly occur together or in sequence.

The observable regularity is, according to Liebniz, not due to a causal relation or connection between the two phenomena (here labeled putative cause and effect). Rather, each functions independently according to its own nature, yet they happen to (or were programmed by God to) be in phase. This can be illustrated by reference to two clocks that happen to always show the same time, though their mechanisms are not linked.

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[85] Physicists might eventually, or maybe already have, come up with a more dynamic vision of the workings of fields. Some theories seem to suggest they involve particles or waves of some sort in motion (e.g. gravitons). But here, let us take fields at their face value, so to speak.

[86] Germany, 1646-1716.

I mention this doctrine here so as to refute it, for it may have a semblance of truth in it due to common misunderstanding of the nature of causation. For after all, what is what we call the nature of things but the *happenstance* of their various observed characteristics? But the concept of causation is not based on mere actualities; it relies on modal concepts, i.e. on the concepts of possibility and necessity. And in particular, natural causation is based on the corresponding natural modalities. The concept goes beyond perceptual data, though we try to base it on such data.

That is to say, to claim that (for instance, using the strongest determination of causation as our example) P is a 'complete and necessary cause' of Q is not merely a claim that presences of P are accompanied by presences of Q and that absences of P are accompanied by absences of Q. No – it is a claim such togetherness or sequence of events does not merely not-vary, but is invariable. It is necessary; i.e. in the case of natural modality: it is a natural necessity. Or in other words: its negation is impossible by the nature of the things concerned. If no such claim is being made, we cannot truly say that we are discussing causation.

This can be made clearer if we look at the matricial analysis for the determination in question, i.e. the following simple table (drawn from my book *The Logic of Causation*):

Matrix of "P is a complete and necessary cause of Q".

Items		Relation
P	**Q**	**mn**
1	1	1
1	0	0
0	1	0
0	0	1

In this macroanalytic table, the "1" and "0" under the items P and Q signify respectively presence and absence of those items in different combinations. But the "1" and "0" under the relation "**mn**" (symbolizing complete and necessary causation) mean respectively "possible" and "impossible". That is to say, in the latter case, mere continued non-occurrence of the PQ combination concerned is not sufficient to prove the stated causation, there has to be an assumption that such combination will never occur, because it cannot occur. Such proof is logically possible thanks to the principle of induction, and it is possible only by this means.

Liebniz's doctrine effectively accepts temporal causation, spatial causation, extensional causation, and even logical causation, but arbitrarily rejects natural causation. These various modes of modality and thence of causation are all identical in principle, differing only in the basis of generalization (and if need be particularization) they involve. Temporal necessity ('is always') requires generalization from some to all times of some existent; spatial necessity ('is everywhere'), from some to all places of it; extensional necessity ('is in all cases'), from some to all instances of some concept; logical necessity (however expressed), from some to all contexts for some knowledge.

The only distinction of natural necessity (again, however verbally expressed) is its requirement of generalization from some to all circumstances surrounding some event. If one sort of generalization is admitted, there is no technical justification for rejecting any other sort; the epistemological process and inductive argument is identical in every case. As already explained, individual acts of generalization may turn out untrue, but the process cannot be denied in principle without self-contradiction. Hume makes the same error, as earlier shown.

It should be added that Liebniz concocted this non-modal (i.e. exclusive of natural necessity) causal theory to buttress his bizarre theory of "monads", according to which the world is populated by entities (called monads) existing and functioning entirely independently of each other. To explain how come, despite their claimed mutual independence, we can observe seemingly coordinated behavior patterns among things, he postulated the idea of pre-established harmony.

Moreover, this was not, in his view, mere coincidence, but an illusory order deliberately programmed by God. It apparently did not occur to Liebniz that the concepts of independence and Divine programming of the monads required a modal understanding of causality for their formulation. He was effectively saying that worldly events do not cause each other, but do have as common cause God; that is still an admission of causality as such. He was thus tacitly involved in concept-stealing or self-contradiction - unless we consider that he was not like Hume denying causality *de jure* (in principle), but only *de facto* (in a limited field).

The deeper problem with Liebniz's theory of independent monads is its imposition of a grand 'purely rational' construct on reality, irrespective of experience. This is an example of what Boorstin has aptly called "the German *a priori* method" (p. 237). We find the same psycho-epistemology in Kant and Hegel, and many other (though not all) German philosophers – a propensity to build massive intellectual systems (based on a few tendentious observations and insights, and blithely ignoring contrary empirical data and logical limitations). This is not only a failure of due empiricism, but more broadly of understanding the many demands of objective human induction. These thinkers – for all their intelligence and valuable contributions – get romantically carried away by their arcane conceptions, without regard for their obscurities and anti-empirical aspects. They are emotionally driven by the ambition to be the Big Genius who solved all the problems in one sweep, and so easily enthused by apparent panaceas.

13. Addenda (2009)

1. Concerning **the principle of uniformity**, discussed in chapter 2. It should be noted that the underlying assumption of this principle is the particular proposition "some things (whether elements of experience or products of abstraction) have some characteristics in common". This is clearly not a generalization, because it is not a generality! It is merely an admission that the world we face seems to have some repetitiveness in it, without any prejudice as to the extent of such repetition

And as to how this particular proposition is known to be true – it is not so much by experience as by logic. For if we tried to claim its contradictory, i.e. that "nothing has any characteristic in common with anything else", we would be guilty of self-contradiction, since the use of any concept whatsoever (like "thing", "has", "characteristic", "in common", etc.) relies on a supposition that two or more things have certain characteristics in common, thanks to which we may give them a common name. And it cannot be said that things have nothing in common other than the name we conventionally apply to them (Nominalism), since even appeal to a common name implies that the two or more instances of the name concerned are recognizably "the same" name, so that is an inconsistent objection.

Thus, the principle of uniformity is based on a logically necessary particular proposition.

2. In the discussion of sensory perception in chapter 4, I forgot to mention **Thomas Reid** (Scotland, 1710-96). Although modern histories of philosophy tend to ignore him or gloss over him, this contemporary and fellow countryman of David Hume's was during his lifetime more respected than the latter, because of his common sense approach to philosophy. Reid rejected Hume's (and others') skeptical claim that what man perceives are internal impressions, i.e. mental products of the physiological process of sensation, and ably defended the direct realist view that what man perceives are outer physical causes of the sensations. Hume was aware of Reid's criticism of his work, but remained indifferent to his arguments although they were more perspicacious and reasonable than his own. Later, too, Immanuel Kant (a younger contemporary of Reid's) paid little heed to Reid's arguments.

It should be noted that direct realism is sometimes wrongly confused with naïve realism. These are in truth not identical philosophical concepts, though they may on occasion overlap. Naïve realism essentially refers to the worldview of the common man, who takes for granted the reality and materiality of the world apparently around him without asking questions as to the veracity and substantiality of such appearance. Direct realism is perhaps logically implied by naïve realism, but certainly does not reciprocate such implication. Direct realism is the

view, as already stated, that we perceive the world itself and not alleged mental representations of the world.

Opponents of direct realism claim that advocacy of this philosophy can only be arbitrary say-so or circular argument. However, this accusation is untrue. The main justification of direct realism is the manifest logical inconsistency of the opposite view, advocated by Hume, and John Locke before him and Kant after him. Impressions, ideas, representations divorced in principle from external objects lead inevitably to self-contradiction – and are therefore far more flawed methodologically. One cannot claim ideas or impressions to represent (i.e. give indirect access to) anything beyond representation if one first claims to have no direct access to anything beyond them. As of the moment the advocate of direct realism has thus (and in many other ways) argued his case, he can no longer accurately be accused of naïve realism. His realism must be labeled (relatively) subtle, instead.

However, the most important and precise distinction between naïve realism and subtle realism lies not in the self-contradiction of the antithesis of direct realism, but with reference to phenomenology. If the direct realist is content to claim that sensory perception is perception of physical reality (as against representations of it), he is still functioning on a relatively naïve level. His understanding is fully subtle only when he comes to understand that the preceding is an inductive hypothesis (better than any other) that admits the phenomena perceived as *ab initio* mere appearances (i.e. not as necessarily realities or necessarily illusions, but as possibly realities and possibly illusions).

Thus, though Reid's common sense approach to direct realism was logically preferable to Locke's, Hume's and Kant's absurd representational cognitive philosophies, it was perhaps not the final word on the subject, since phenomenology was still not very developed. That is not to say there was no phenomenology in Reid's approach, but only that it was not a thoroughgoing phenomenology. Reid, in any case, did not claim to have answered all questions regarding direct realism, and indeed to date many crucial problems have remained unsolved (as explained my main text).

3. In the discussion of the ethical means and ends in chapter 7, I pointed out that, for instances, life and soul were two things that could logically be affirmed to be natural and absolute standards of value, since they are preconditions of any ethical discourse, i.e. since ethical discourse is only applicable to beings with life and more specifically with soul, i.e. beings with powers of consciousness, volition and valuation like us humans.

As I have suggested in my work *Volition and Allied Causal Concepts*, the term "life" in this context does not just mean bodily life – though this is doubtless its primary meaning. The term can also legitimately be taken to refer to spiritual life, i.e. the life of the soul. Indeed, in the last analysis ethics is concerned with bodily welfare rather accessorily: its main concern is with the soul's welfare.

An obvious consequence of such extension of meaning is that those who believe in life after death (as in Judaism, Christianity and Islam) or in reincarnation (as in Buddhism and Hinduism) can construct an ethics without committing a logical error. That is to say, ethics is not necessarily limited to this life and this world.

Clearly, if we assume that our life goes on or returns in some form even after our body has died, it is logically quite okay (though at first sight it might seem paradoxical) to build an ethics in which the body might be deliberately risked or sacrificed in favor of the soul's longer-term interest.

Those who view their life on earth as a mere visit in a longer journey naturally and quite logically evaluate their thoughts, words and deeds with reference to that broader context rather than in the narrow sense of physical survival. Although such survival is important to ethics, it can on occasion be overridden by more abstract, wider or higher considerations. Such occasions provide one with a test of one's true values.

Of course, such self-sacrifice can easily be wrongly based on fantasy and illusion, since we do not know of the hereafter except by hearsay or presupposition. In most circumstances, it is wise to assume that one's continued survival is the most beneficial course of action. But in special circumstances one might well judge that to accept some present evil would endanger one's future life or lives. For example, some saintly persons have preferred to die rather than to be forced to kill an innocent person.

People can conceivably and sometimes do risk or give their physical lives in defense of their family, their people or nation, humanity as a whole, life as such, or in God's service, because they perceive themselves, not as delimited bodies and independent individuals, but as parts of a larger whole – a group of people or of living things or the collective or root soul that is God. The value of one's life is in such case a function of the value of the larger unit.

In sum, though we may use the term "life" as a short and sweet standard of ethical discourse, the term should not exclusively be understood in its simplest, material sense, but may logically be widened to admit more spiritual goals, whether this-worldly and other-worldly.

Book 2. A SHORT CRITIQUE OF KANT'S UNREASON

A Short Critique of Kant's Unreason is a brief critical analysis of some of the salient epistemological and ontological ideas and theses in Immanuel Kant's famous Critique of Pure Reason.

It shows that Kant was in no position to criticize reason, because he neither sufficiently understood its workings nor had the logical tools needed for the task.

Kant's transcendental reality, his analytic-synthetic dichotomy, his views on experience and concept formation, and on the forms of sensibility (space and time) and understanding (his twelve categories), are here all subjected to rigorous logical evaluation and found deeply flawed – and more coherent theories are proposed in their stead.

Author's note

My writing the present essay focusing on some of Kant's illogical views should not of course be construed as a rejection of everything he says. I regard many of his contributions as very interesting and instructive. Moreover, I am well aware that a philosophical system as broad and complex as Kant's cannot be treated fairly in a few pages, particularly without claim to expertise in Kant's philosophy. All I hope to do here is roughly sketch some of his basic ideas, and give my logical comments in relation to them. Many of these comments are, I think, original, and that is why I feel some urgency in writing them down. Of course, it would be nice if one day I have the courage to take up the daunting task of writing a large and detailed book on Kant's thought, but in the meantime this brief exposé will have to do.

1. Kant's transcendental reality

René Descartes and David Hume, and other enlightenment philosophers, both enriched and impoverished Western philosophy. They gave it increasing breadth and depth, but they also instituted many serious errors of thought, many of which have lingered and festered till today. Some of these errors were inevitable, being merely a surfacing of deep, ancient common problems; but many errors could have been avoided with a bit more effort.

The same can be said concerning Immanuel Kant[87]. Even as he earnestly tried to fix some of the damage caused to philosophy by his predecessors, he caused further and more profound unnecessary havoc. For instance, his theory of reality has greatly exacerbated (although he denied it) the Cartesian mind-body dichotomy. What in Descartes' philosophy was a not fully answered question becomes in Kant's an institution. We will here first give some consideration to this philosophical legacy, namely his famous dichotomy between:

- **Things as they appear**, or "**phenomena**", which constitute the **immanent** world of common experience, which (according to Kant) is illusion.
- **Things in themselves**, or "**noumena**", which (according to Kant) constitute a **transcendental** world to which we have no empirical access, which is reality.

According to Kant, these two sets of things (or objects) are necessarily different, and so constitute separate worlds. We can 'know' the world of appearance, insofar as we have access to it through our senses and ordinary reasoning relative to them. But this is of necessity not the real world, since it is tainted by consciousness. The world of reality is by definition unknowable, since the senses have no access to it, and if they did it would not be independently real anymore. Hence, we have no true knowledge and can have none.

Kant followed Hume in believing man's 'knowledge' to be necessarily limited and distorted, because (i.e. simply by the very fact that) it is mediated by the senses. We only perceive what the senses present to us, but have no knowledge of the way things beyond the impressions they give us really are. Kant attempted to mitigate or overcome such negative conclusions by laying claim to some knowledge by other means, i.e. by radically non-empirical means.

According to him, our perception and understanding of the world is a result of filtering or molding of our sensory impressions through *a priori* intuitions (of space and time) and *a priori* concepts (such as causality). Such "pure forms of sensibility and of understanding" impose on

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87 Germany, 1724-1804. Kant's *Critique of Pure Reason* (1781; 2nd ed. 1787) can be read on the Net at http://philosophy.eserver.org/kant/critique-of-pure-reason.txt. For a brief exposition of it, see http://en.wikipedia.org/wiki/Critique_of_pure_reason (though keep in mind there are disagreements among commentators).

us a certain basic view of the world, independently of (i.e. without regard to or appeal to) any content of sensation. They are structural preconditions of, respectively, any perception and any conceptual understanding, which therefore to a certain extent *determine* our thoughts without any reference to experience, which means effectively '*subjectively*' (in one sense of the term, i.e. at least not objectively).

Kant referred to this upside-down approach to human knowledge (which reverses the traditional empiricist assumption that all ideas must derive from experience) as his "Copernican revolution"[88]. But of course by attempting such a solution to the difficulty Hume had presented him with, Kant only all the more confirmed the problem.

But, I submit, all the above is based on *arbitrary claims and misunderstandings*.

All such claims of his are premises rather than conclusions. If we ask by what validated methodology Kant has justified these beliefs of his, one is hard put to give a cogent answer. Since Kant has (like Hume) essentially given up on the intricacies of inductive logic, or perhaps never known or understood them, the arguments he puts forward can only constitute window-dressing around what is simply an intuitive-declarative mode of philosophizing[89]. Such an authoritarian approach (he *tells* us what the truth is, from a privileged standpoint) is bound to lead to errors and inconsistencies.

Perhaps the best way to respond to such ideas is not to focus so much on their tangled and dubious genesis from doubtful premises, but rather to concentrate on identifying and evaluating the finished product. It would be foolish to reject all of Kant's thought wholesale because of its imperfections, for it also contains a great many interesting new insights and perspectives, which do enrich philosophy. However, his thought is also rich in holes and contradictions; and these certainly can and should be highlighted.

Domains. It should be noted that although Kant, siding with Hume, officially denied our having any faculty of transcendental knowledge, the idea of transcendental reality remained central to his philosophy.

That is, although he did not officially advocate a human faculty with access to the noumenal domain, the simple fact that it was being at all considered and discussed (as something that may conceivably exist) gave it a sort of legitimacy. In this way Kant could eat his transcendental cake (*de jure*) and have it too (*de facto*). Of course, to conceive of something does not strictly imply that it exists. But to place that idea of possible existence at the center of one's discourse does signify an effective belief in and approbation of it. The idea is used indirectly and in a concealed manner, and gradually seeps in[90].

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88 To call it a revolution was apt. To call it Copernican, I am not so sure, for the benefits or disadvantages were not comparable. This desire to imitate Copernicus, and find some ingenious new formula that would 'turn things around', and surprise and impress everyone, is sheer vanity. Philosophers and logicians must learn to overcome it within themselves, and be content with development or evolution instead of revolution. Kant, for all his breadth and genius, had a mind insufficiently disciplined by logic and too easily carried away by vague fantasies.

89 Using the word 'intuitive' here in its more pejorative sense.

90 For instance, when Kant speaks of a "transcendental deduction" he is in fact claiming "transcendental knowledge" of sorts for himself. He may dress it up as "deduction", but it is the "transcendental" part that counts. Read his lips.

Moreover, because Kant considers the world of appearances as co-extensive with the world commonly believed in and studied by natural science (i.e. the material world), he needs a transcendental world to justify and explain less materialistic beliefs like God, souls, mind, consciousness, freewill, ethics, aesthetics, and the like (i.e. spirituality). For, while paying lip service to Hume's apparently scientific limitations on knowledge, Kant's philosophical aim and ambition is to get beyond these limitations and reinvigorate the concerns of philosophy that they have seemingly invalidated[91]. Thus, ultimately, though he is careful not to declare it too explicitly, Kant implicitly upholds a transcendental (i.e. otherworldly) reality.

Nevertheless, Kant's philosophy is clearly, overall, a form of skepticism. For, although he (unlike more radical skeptics) does not deny outright, but rather tacitly (and sometimes somewhat explicitly, too) assumes, there are things in themselves behind things as they appear, he still does deny our ability to access them through our faculties of empirical knowledge (notably our sense organs and brains), and thus effectively condemns us forever to the limited and virtual world of appearances.

It follows, paradoxically, that what we are to call reality thenceforth (i.e. *transcendental* reality) is of necessity something imaginary for us, since we have no empirical or extraordinary way to know it; and the world of appearances that we do know must be called illusory (since it is in principle *other than* such reality). Of course, this whole scenario is being claimed true, i.e. as reality, so we are fed a deep contradiction here.

It should be noted that this infelicitous quandary is a consequence of Hume's rejection of inductive logic. If induction is doubted, hypothetical thought is an unacceptable form of human cognitive behavior, for in a purely deductive logic (if such a thing were at all conceivable), a thesis must either be true or false – no degrees of truth are admitted. A mere hypothesis, a thesis that has no special evidence going for it other than the meaning of its terms (if that), is in that context necessarily wrong.[92]

If mere hypothesizing is illegitimate, all the more so is *speculation* (be it metaphysical or otherwise). For a speculative thesis is not only hypothetical, but moreover we can think of no way that it might eventually be empirically reinforced or rejected. That is to say, it is not only not-yet verified or falsified, it is in principle neither verifiable nor falsifiable. In that context, the possibility that we might someday think of a way to test our speculation is not admitted as an argument, since only certainties one way or the other are given credence.

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[91] It is interesting to note the (not fortuitous) similarity between Kant and Wittgenstein in this respect. The latter invalidates ordinary language, and considers that the things that really count and are interesting to philosophy are therefore unattainable; but at the same time he holds onto a wistful interest in those faraway things. Of course, this was all pretentious posturing, since Wittgenstein communicates all of it to us through ordinary language (how else could he present his thesis to us?), which means that his actions are inconsistent with his thoughts, which means that the latter must be regarded as false (since the former are inevitable).

[92] People who think thus forget that science is not certainty, but discipline in the midst of uncertainty (see Feynman pp. 15-28). Science progresses by imagination – which is of necessity at first, and in a sense forever, somewhat hypothetical. A thesis is hypothetical even if it is 'only just conceivable'; i.e. even if its credibility is at the lower limit of truth, provided it has not been refuted by experience or logic. Such a thesis still has some epistemological status and value, even if it is not comparable in certainty to theses with more evidence to support them. At the other extreme of this range of truths, we have self-evident truths, i.e. pure empirical data or contradictions of self-contradictory statements.

It must be stressed that the stated dichotomy between things-in-themselves and things-as-they-appear, however arrived at by Kant, is understood by him as implying *two antithetical domains*. They are presented as essentially without relation to each other, or at least without demonstrable relation; therefore, discrepancy between them is inevitable (epistemologically if not ontologically). Since they are unrelated or of unknown relation, they are necessarily in part or in whole contradictory.

To refute Kant, we must first ask *how he himself knows enough* about this transcendental domain to know it is unrelated to, different from and contradictory to the domain of ordinary knowledge? If he denies humans any means to knowledge of such 'true reality', then he is contradicting himself in the very act of discussing the issue, since to do so even hypothetically is to claim a means to knowledge of it of sorts.

It is worth noting that Kant also, in some contexts, regards the phenomenal domain to be somehow and somewhat *caused by* the noumenal domain. But he would be hard put to explain how he got to know of such causation, given his belief system (about empirical knowledge and about knowledge of causation). By such illogical thinking, Kant imputes us with inextricable ignorance (which he of course is seemingly somehow exempt from, to some degree at least).

Evidently, Kant is functioning simultaneously on two planes. Like any ordinary man in practice, he considers himself in contact with external reality and able to know to some extent whether his ideas correspond or not to it, are caused by it or not. On the other hand, as a philosopher influenced by Hume's argument that we only know our impressions and not the external facts that we believe caused them, he is intellectually forced to reject all such commonsense belief. His whole system of philosophy is an attempt to satisfy both of these tendencies in him; but he was not sufficiently logical a person to find a consistent solution.

How then, we may well ask, do we in fact ordinarily come to the distinction between reality and appearance? What answer can we propose instead of Kant's? We need to explain how these concepts are understandable to both Kant and ourselves, for his ability to talk about these things and our ability to understand him must be taken into account and satisfactorily explained.

The truth is, we arrive at these concepts *in relation to each other*. Reality is to us a characterization *of* most appearances, *except* those few we class as illusory because of intractable empirical or logical problems they give rise to. Thus, appearance is the *common character* of reality and illusion, rather than equal to illusion and opposed to reality. Conversely, appearance is an aspect of a larger reality, namely the fact that the latter is (at least in part) knowable through consciousness.

Hence, the two concepts are in fact related – each giving rise to the other, whether by an epistemological or by an ontological route. Things in themselves are known by an accumulation of appearances; we gradually perceive *aspects, parts or features of* the things themselves, and (by means of comparisons and contrasts and other logical acts) form credible concepts of them. The concept of "things in themselves" does not spontaneously arise in our heads out of nowhere, as some sort of hearsay report of a world beyond our own; it first arises as a characterization of most elements of our world.

Therefore, in actual practice, reality emerges as but *a subcategory of* appearance, and not as a phenomenological category *opposed to* that of appearance. The two concepts are harmonious, not dissonant. Reality is sometimes legitimately opposed to illusion (illusory appearances), but

never to appearance as such (*qua* appearance), note well. All appearances, whether real or illusory, are parts (however unequal in status) of the same one world. And any *non-apparent realities* there might eventually be (as we may by extrapolation suppose or speculate) are logically also part of that same one world.

This is the way those basic concepts can be logically reconciled. Kant failed to see it.

The notion of a mysterious "other reality" behind (or above or beneath or beyond) ordinary reality is a later construct, of shamans, religious mystics and philosophers. There may be some eventual truth in it, but it cannot displace the basic concept of real appearance as against illusory appearance. We may eventually establish a concept of "true reality" or "ultimate reality" as against ordinary reality, through some convincing mystical insight or at the end of a long inductive process, but this would extend or deepen rather than nullify ordinarily apparent reality.

If we label this presumed, ordinarily hidden domain as Kant did 'the noumenal domain', one thing is sure about it – it does not consist of 'another set of phenomena', existing somehow apart from the multiplicity of phenomena of ordinary experience. The 'noumenon' can thus safely be assumed to be *unitary and non-phenomenal*. We can on the basis of this insight perhaps equate it to the underlying One of philosophical Monism, or the 'original ground of being' or 'original mind' of Buddhism, or again to the God of Monotheism.

Our faculties. To claim things are constitutionally not as they seem, is to claim that our faculties of cognition (whatever these be[93]) make things seem other than they really are. By opposing reality and appearance to each other, Kant effectively asserts that *the very fact that we have faculties* of perception and understanding invalidates them. He takes it for granted that such faculties of knowledge *necessarily* distort – just because they are faculties, i.e. structures of some sort through which knowledge has to be acquired.

Of course, Kant does not assault our faculties so frontally. He in fact claims to defend them, to widen their powers. But by assigning *them* the power to make sense of sensory impressions, he severely limits *our* powers of cognition and thus creates an *unbridgeable gap* between us and the world around us. It logically follows from his doctrine that our faculties are incapable of putting us in contact with true reality, and can only deliver to us a semblance of reality.

But that implied claim of his is quite unproven, deductively or inductively. It is based on Hume's analysis of the issue; but if we examine that, we find it contains many factual errors and errors of reasoning. Moreover, by claiming to know what our faculties are or are not capable of, Kant is – within the framework of his own system of philosophy – engaged in transcendental knowledge. For if we can only know the cognitive *products of* our faculties, then not only external reality is unknowable *but also our faculties* are unknowable. Under his régime, to know our intermediary faculties would in principle be as impossible as to know what lies beyond them[94].

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[93] One's faculties of cognition are the physiological and psychological apparatuses which make possible one's consciousness of things other than oneself, and also perhaps of oneself. We need not be able to define them much more precisely than that to discuss them, though of course we can say that they include (at least, most obviously) the sense organs and the brain.

[94] Note well this reflexive thought, which many commentators on Kant have missed.

Kant's fundamental doubt and the massive philosophical system he built around it are, in the last analysis, just arbitrary assertions arising out of utter personal confusion. However intelligent and well meaning he may have been, that is the bottom line. The whole thing seems credible to some people only because they have simply not sufficiently reflected on the implications involved – i.e. because they are still as confused as he was.

To give a physical analogy to Kant's view of our faculties – it would be like saying that the very fact that water is sent through a pipe is proof that what comes out at the other end is not water, or is dirty water. Or again, it would be like saying that information processed by a computer is necessarily mixed up by it (i.e. sometimes you feed it a 1 and it spontaneously returns a 0, or vice versa). Some physical systems do significantly affect the things they process, but it does not follow that all do so.

Similarly for our sensory mechanisms and our brain. It is quite conceivable that our faculties convey information without twisting it out of shape. A filter does not necessarily function incorrectly. To claim it to always function incorrectly, one would have to demonstrate the fact specifically. We cannot just say-so, or generalize from some dysfunctions to others not like them. We cannot just assume that whatever stands in between us and the world necessarily blocks or distorts the view; some screens are effectively transparent.

Furthermore, we cannot assume that our faculties distort *without being guilty of self-contradiction*, for we are presumably using these very faculties to assert it. *Therefore*, some non-distortion must logically be admitted. This argument is a *coup de grace* against any idea of constitutional dysfunction of human knowledge faculties. If Kant counter-claims that his own assertion is the one exception to the rule, he is logically required to provide some convincing proof, which specifically for some credible reason exempts the faculties *he* uses in making the assertion. The onus of proof is on him, if he wishes to exempt himself from his skepticism towards our faculties.

Moreover, contrary to Kant's suggestion, we do not filter, mold, format or otherwise affect our experience of the world through "forms" like space and time or like causality. We rather *mentally project "overlays"* (i.e. transparent templates) on the field of appearance, mentally splitting it into parts and into distinct entities, of different sizes and various distances apart, assuming the outlines and depth of things, comparing and contrasting their measurements, mentally noting the sequences of events, their presences and absences, their frequencies.

It is on the basis of such primary observations and ratiocinations, that we proceed with conceptualization and draw many conclusions about the world. Though affected by the object, none of this affects the object.

For example, when we subsume all humans in the class of 'humans', we are in no way making any actual change in the objects we have called humans, but only affect (or express) our perception (or rather, conception) of these objects, implying the objects have a certain commonality and distinctiveness which justifies classing them under one head. Such classification counts as *a mere inductive hypothesis*, anyway, for it is not excluded that someday a different classification may seem more appropriate to us. The history of biology, for instance, is replete with such changes in classification.

More deeply, the senses do not *mediate* between us and the world seemingly beyond them (and thus screen the world from our view). We first experience the external world itself *directly*. The senses play some role in triggering that experience and in memorizing it, but they

do not hinder or obscure it. *This is the only self-consistent hypothesis* with regard to perception of externals. To assert the opposite hypothesis (viz. that we do not perceive matter, but only mere images or other mental effects of matter) is self-contradictory; therefore the truth of our hypothesis is self-evident, logically incontrovertible.

It is important for philosophy to mature at last, and accept to be disciplined by inductive as well as deductive logic[95]. Philosophers must understand and accept and internalize the fact that *any* theory that yields a contradiction must be abandoned and replaced by an alternative theory, or at least modified till it becomes consistent. If we evaluate Kant's theory of knowledge with this indubitable and inescapable principle in mind, we are logically forced to reject it. Every philosophy is *an inductive hypothesis*, which must win and keep our respect in the same way as proposed theses do in other fields.

If we persist like Kant in following Hume's *hypothesis* that we do not experience the world itself, but some impressions or ideas that may or may not reflect the world, we will never give ourselves the chance to investigate *the alternative hypothesis* that we do experience the world itself. Hume's skeptical hypothesis is not consistent. The alternative hypothesis is admittedly difficult to flesh out, but at least it is consistent. If we remain eternally paralyzed by Hume's perspective on things, we will never make an effort to imagine and test ways and means to flesh out the direct perception theory.

Our cognitive operations are in principle transparent; they do not in any way directly affect the objects that we observe or modify their appearance to us. At least, they do not *if we are careful* not to get carried away by our ideas without due attention to detail and to logic. If we observe and reason vaguely and loosely (or worse still, perversely), we of course may well expect distortions to occur. That constitutes misuse, improper use, of our faculties.

Humans are, to be sure, *fallible*. For a start, we are largely ignorant, simply due to the sheer immensity of the world around us. Moreover, we often falsely perceive (or more precisely, conceive) things, as we later discover. Many of our ideas and theories have turned out to be in error, though we adhered to them for very long. And of course, under the influence of such false beliefs, we are every day being misled in our perceptions and conceptions, in the sense that we may (a) fail to perceive certain things that are present because we do not expect them there, or (b) perceive things that are absent or perceive things incorrectly, by confusing our imaginations or expectations with observations; or (c) we may misinterpret what we perceive or do not perceive.

But the negative effects our acquired beliefs may have on our subsequent perceptions and conceptions should not be considered as blinding or distortion due to our cognitive faculties. It is true that we are not infallible; but that does not imply we are *wholly* fallible. The problems in such cases are simply insufficient information and, more shamefully, imperfect logical practice, such as ignoring details, drawing hasty conclusions, and so forth. The proof that the faculties are not to be blamed is that *it is through those very same faculties that we occasionally uncover and correct the errors concerned*.

Our conceptions and more largely our theories may of course also affect things *indirectly, ex post facto, by influencing our actions* relative to the objects concerned. For example, if some

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[95] That would be a true "Copernican revolution" – or rather, evolution! To free philosophy from repeating the same mistakes again and again. To look beyond our mind-sets.

people classify members of another race as sub-human, this thought will cause them to engage in racist acts, harming and maybe killing those they hate. But such destruction of the object by acts based on wrong thoughts is not to be confused with cognitive distortion such as Kant suggests. It occurs, to repeat, after the fact.

Induction. The attack on our faculties by Hume, Kant and many other philosophers, is fundamentally due to a failure to take into account and understand inductive reasoning. Contrary to Hume's belief, as I have shown elsewhere, there is no "problem of induction". Hume just made major errors of induction and deduction when he put forward this problem and other related problems. As for Kant, he just took Hume's view for granted, without any truly critical review.

The principle of induction validates human knowledge, simply by demanding from those who deny knowledge that they do more than just assert their skeptical claim – i.e. that they provide a relevant, consistent and sufficiently empirical hypothesis in support of their theoretical posture. If they cannot do so, then we can reasonably continue to rely on our senses and on our reason. If we examine their doubts closely, we find them to be hypotheses (or even speculations), which tightly or loosely refer to some real or imagined difficulties in traditional assumptions, but which are themselves not devoid of equal or worse weaknesses.

The principle of induction is that *what appears may be taken as reality until and unless we have some experience or reason that suggests we are engaged in an illusion*. Appearance is reality, except when otherwise proved. Blanket skepticism is logically impossible; skeptics must prove their case specifically. This principle underlies Aristotle's laws of thought, and ties them together in a single and very powerful methodological formula.

We cannot sustain the contrary hypothesis that the very fact of appearance is proof of illusion – for such a claim would be self-denying. If all appearance is illusory, then the illusoriness of appearance is illusory. It follows that at least some appearance is real – *has to be admitted as* real. To claim something, any thing, illusory, it is necessary to present *specific* evidence or argument to that effect. Illusion cannot but be exceptional; it cannot be taken as the rule. For illusion is by definition the denial of reality; therefore, to assert an illusion some reality must first be acknowledged. There is no way out of this logic, though sophists continue to ignore it.

By 'appearance' we refer to the common character of both 'realities' and 'illusions' – i.e. it is what these two contradictory characterizations of any 'thing' have in common. All three terms imply, when we use them, both being in existence and being a content of consciousness. Thus, an appearance is something, whether real or illusory, *of which we are aware*. It *exists* at least to that extent, i.e. as an object of consciousness, though not necessarily beyond consciousness. If it exists *only* in consciousness, it is illusory; if it exists *both* in consciousness and outside it, it is real.

Note well that the concept of appearance is neutral with regard to the issue as to whether the current content of consciousness is 'objective' or 'subjective'. Appearance is a level of consideration occurring before this issue is or needs to be resolved. Thus, appearance is 'neither objective nor subjective' – or more precisely and less paradoxically put, it leaves that issue open for the time being.

We consider that many things also exist unbeknownst to us; i.e. we believe in things that are *real though not apparent*. We do so on the basis that things in our experience do not all appear together, but some appear at one time, others at another time; also, some things disappear, and then maybe reappear. Moreover, different apparent people have different experiences. Thus, by extrapolation, in the way of a convincing inductive hypothesis that aims *to integrate all such data*, we acknowledge a reality beyond appearance.

However, this assumption can only be consistently discussed with great caution. We cannot claim to know something outside consciousness, since the moment we make such claim we are including it within consciousness. We can, however, claim to know *of* something conceptually and indirectly, without implying we have full consciousness of it, in the sense that direct experience confers. We can consistently claim hypothetical knowledge, without implying categorical finality. That is, in an inductive framework, there are *degrees* between knowledge and ignorance.

Now, the point I wish to make here is that in criticizing Kant's idea of a "transcendental" or "noumenal" reality, I am not like many philosophers before me denying him or us the right to metaphysical speculation (or even some sort of direct transcendental consciousness). It is not the conception (or even perception or apperception) of a reality beyond the one we ordinarily experience that I am contesting. In that case, what is wrong with Kant's view? Simply this: that he pits the presumed transcendental domain *against* the ordinary domain, both epistemologically and ontologically.

He maintains that such reality technically cannot *at all* be known, yet he implies he knows it enough to affirm it somewhat. He considers it is radically different from and indeed opposed to appearance, yet he considers that our sensory faculties have access only to appearance. It is such internal contradictions, which give Kant's theory its characteristic flavor of paradox (and therefore 'depth' in some silly people's estimate), that need to be emphasized and challenged.

It would be logically quite acceptable to state that no matter how much we know, we will never be omniscient; i.e. that there is always more to know. It would even be quite acceptable to say that there are things out there of which we will never know, that we cannot 'know' except very speculatively. This is all consistent, if it is formulated in the way of inductive probability, i.e. as hypothetical projection from the given to the not-yet-known or the largely unknowable. But it cannot be proposed like Kant did as a categorical truth, known by totally "deductive" means.

To give a concrete example: we can imagine that our universe, the material universe of physicists and astronomers[96], is a mere speck of dust in a much larger material universe full of zillions more such specks of dust. Science might come to such a conclusion for some reason (some such idea is already somewhat suggested in the String theory, with its many new dimensions). Or we might conceive this as a forever-speculative possibility, arguing that our telescopes and other instruments of observation of necessity cannot take us beyond the 13.7 billion year old universe apparent to us.

Such eventual claims are very different from Kant's claim of a transcendental reality. Not because of any mystical suggestions his theory might have – for we could formulate consistent

[96] Though current science estimates the universe as 13.7 billion light years wide, it does not categorically exclude something beyond; as Feynman puts it: "but it just goes on, with its edge as unknown as the bottom of the bottomless sea" (p. 10).

speculations to that effect too. But simply because the larger universe they propose is presented as *a further extension* of the apparent smaller universe, and not as its antithesis. In such non-Kantian perspective, experience remains the ultimate basis of all knowledge, however inductively remote and speculative it becomes. Even if such speculation is largely ultimately unverifiable and unfalsifiable, it is at least kept as consistent as possible with all experience.

In the Kantian perspective, on the other hand, experience is depreciated and ultimately nullified. First, experience is effectively discarded wholesale as incapable *by itself* of informing us regarding any aspect of reality whatever; we must rely on non-empirical "forms of sensibility and understanding" to get any knowledge out of it *at all*. That is, in ordinary knowledge, experience is as good as nonexistent, before reason comes into play and creatively gives it shape. Secondly, as regards knowledge of *ultimate* reality, experience (and indeed, reason) is something devoid of any epistemological value or ontological significance whatsoever. That is, experience (and indeed, reason) is misleading *in principle*, i.e. necessarily wrong.

It is this radical transcendental "idealism" (i.e. anti-realism) that distinguishes Kant's philosophy, and makes it logically untenable. Many observers and commentators fail to spot this fundamental antinomy in Kant, because Kant's discourse is very intricate and broad ranging, and it is full of outwardly reasonable looking *approximations* of the human condition. Many other thinkers, of course, do realize the confusions Kant's philosophy has sown.

2. The analytic-synthetic dichotomy

Kant's dichotomy between the world apparent to us and some unknowable more really real world beyond is based on and buttressed by his **peculiar theory of logic**. I refer especially to his analytic-synthetic dichotomy.

According to his view, a proposition like "all bachelors are unmarried men" is analytic, meaning that it can be known to be true merely by examining the terms or concepts involved[97]. Thus, "analytic" refers to purely rational knowledge, which does not need to appeal to experience. This implies that all analytic propositions are "a priori". Moreover, all of them are (logically) "necessary", since their truth is not open to debate. To deny them would be to commit an antinomy[98].

Thus, a proposition like "all bachelors are unmarried men" is at once ***analytic, a priori and necessary*** (and thus universal, certain and fixed). By way of contrast, a proposition like "all bachelors are happy" is ***synthetic, a posteriori and contingent*** (and thus particular, uncertain and variable)– because we cannot determine just by rational means alone whether it is true or false, but must look into the matter empirically without any certainty of success[99].

(The above used examples, on the subject of bachelors, are those most commonly used nowadays by commentators. Kant's actual favorite examples were "all bodies are extended" and "all bodies are heavy", respectively. These are for the moment ignored here, because they involve complications irrelevant to the issues at hand. They will be given some consideration further on.)

Now, this logic theory of Kant's is simply balderdash. It is a very superficial and illogical construction. As we shall show, analytic propositions are misnamed; they have nothing to do with analysis – and they are neither purely a priori nor logically necessary.

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97 Kant would also regard the negative sentence "bachelors are not married men" as analytic, since it is deducible (by obversion) from "bachelors are unmarried men".

98 This sounds impressive; but upon reflection we realize analytic statements are mere tautologies, they just repeat the same thing in other words. So they do not contain much information, if any (at least this is the conclusion commentators often draw, but see further on). For this reason, the analytic-synthetic dichotomy bears some analogy to the transcendental-immanent dichotomy. Kant's analytic statements seem to exist in some ideal plane divorced from synthetic ones, just as transcendental reality is set apart from everyday immanent appearances.

99 Kant speculated about the possibility of propositions that would be both *synthetic and necessary.* Hume had previously denied such possibility, e.g. in his rejection of necessary connection in causal relations. In my view, this simply refers to what is properly termed 'natural law' or *natural necessity* (as against logical necessity). As I show in my work *Future Logic*, such propositions can indeed be validated by induction; natural necessity is knowable by generalization from actuality.

Meaning. When we say that a bachelor is an unmarried man, we are not analyzing some pre-ordained truth, nor are we engaged in a wholly arbitrary declaration (as later commentators have countered). In this precise instance, we are voluntarily introducing, for the purpose of economy, a new word "bachelor" to use in place of the phrase "unmarried man" used until now. This is on the surface an equation of words, a "definition" of the word bachelor by the words unmarried man, a mere tautology.

But at a deeper level, what are we doing? We are deliberately *transferring the meaning of the words* "unmarried man" to the newly coined word "bachelor". This implicit 'meaning' is not yet-another verbal definition, but ultimately refers us to something outside the cycle of words – in experience (and abstractions from it). The meaning of a word is what we *intend* by the word, i.e. what experience (and more broadly abstraction) the word has been invented by us to stand for in our verbal thoughts. The intention of a word is what it is designed by us *to point our attention to*.

The word serves as a mnemonic or reminder of something that is ultimately wordless. Thus, when we say: "bachelors are unmarried men", we are not merely juggling with meaningless symbols. The words "unmarried men" must first jointly mean something to us – they must refer us to some meaning *beyond words*. The definition of "bachelors" as "unmarried men" is then simply a conveying, a passing over of meaning, i.e. a redirection of intention. The defining phrase draws our attention to certain objects or contents of consciousness; and then, the defined word is attributed to the exact same objects or contents of consciousness.

When we look up a word we do not know in a dictionary, we are not merely looking for words to equate to it. We are hoping the dictionary definition will point our attention (approximately, if not precisely) in the direction of the meaning of the word. The words in the definition are means to that end; they are not the end itself. They are mere conduits.

The process involved here is very similar to what occurs in translation from one language to another. For instance, the proposition "un célibataire ≡ a bachelor" signifies equivalence between the word in French and that in English. Such equation is not merely verbal, but semantic; i.e. not only are the words equated, but their meanings. Given the meanings, such equation is therefore a statement of objective fact. One cannot equate just any word in one language to just any in the other, and often such equations must be carefully qualified because identical words are unavailable.

It follows that even though our choice of the word "bachelor" as a substitute for "unmarried man" is conventional, and more or less arbitrary, though we often prefer to refer to etymology in coining new words[100], the proposition still ultimately relies on experienced data for its meaningfulness. In our example, the meaning depends on our existing in a society where men and women can engage in a contractual agreement called marriage, with certain rights and obligations on each side. An unmarried man is then a man who has not entered into such an agreement. And a "bachelor" is then declared short for "unmarried man".

The meaning of the word bachelor, then, is certainly *not the words* unmarried man, as some logicians mistakenly think. Rather, the meaning of both the word bachelor and the phrase

[100] Note well: what is conventional here is simply what linguistic *sounds* (and their corresponding written letters) we select for the job at hand. It is a very superficial freedom of choice.

unmarried man is *the apparent fact(s)* that these words all point us to. They are interchangeable because we have voluntarily assigned them a common (wholly real or somewhat imagined) factual meaning. We do not always need words to understand meaning; but words do facilitate more complex thought processes and communication, so such transfers of meaning are usually useful. Although they increase the number of words in our language, the use of shorter verbal formulae permits us longer thoughts.

Clearly, all this implies specific empirical content, and usually also some abstract content (which is derived from other experiences, but has received some rational processing). It is not something as divorced from experience as Kant makes it seem. If I tell you "all shworgers are lkitzerlo abcumskil" – you would say "whaaaaaat?" This would be an example of a definition independent of experience, i.e. devoid of any meaning (other than the meanings of the sentence structure and the words "all" and "are", which I have deliberately kept to make my point[101]) "All bachelors are unmarried men" is obviously not such a fanciful definition.

A small digression on *polysemy*, i.e. multiplicity of meaning, is in order here.

Two (or more) different words are said to be **synonyms** if they have the same meaning. The words differ in sound and/or spelling, yet they mean the same thing. However, we must distinguish between *exact* synonyms and *approximate* synonyms, for though synonymy theoretically refers to identical meanings, in practice it is applicable to words with similar meanings. For it is clear that different words do not have either the same or different meanings – but may variously *overlap* in meaning, i.e. their intentions may converge *to various degrees*. Some pairs may be exactly synonymous; but often, they are only more or less synonymous. Similarly, by the way, *antonyms* (words with opposite meanings) may have strictly incompatible meanings, or (within reasonable limits) more or less conflicting meanings.

Inversely, a single word – that is, one in sound and/or in spelling – may have two (or more) meanings. Note that the words may sound the same and be spelt differently, or they may sound different and be spelt the same, or they may both sound and look identical. In any such case, though the word concerned is materially one, it is effectively equivalent to two words, since it has more than one meaning or intention. These two words – two in meaning though not in verbal appearance – are said to be **homonyms**. Their superficial similarity is not to be taken at face value, whether it has arisen accidentally or incidentally or deliberately. Note however that the word may have *more or less divergent* meanings – i.e. its various interpretations may be semantically very close or very far.

Thus, both synonymy and homonymy may be said to exhibit polysemy. Sometimes, this multiple meaning is concealed in a synonymy; sometimes, in a homonymy. But in any case, some confusion may result. For this reason, it is always wise to keep in mind the difference between the external appearance of words (words as material sounds or sights) and their internal sense (their intended significance, what they is actually meant

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101 If I had said: "shbam lkitzerlo abcumskil shworgers lik" you would have been even more confused. Logicians who lay claim to artificial languages, or purely symbolic constructs, are stupid or dishonest, because they forget or conceal the fact they need existing language (plain English, or whatever) to communicate what they mean by them, with themselves and with the rest of us. To ignore this "little detail" is intellectually criminal.

during their present use). Sounds or sights that have no meaning at all cannot properly be called words – if they symbolize nothing, they are not symbols; inversely, if they symbolize something, it does not follow that they symbolize nothing else. Language is not always cut and dried.

A few words are worth adding concerning the terms *ambiguity* and *equivocation*. These two terms can be considered equivalent – or contrasted. The term 'ambiguous' is reasonably unambiguous – it signifies an uncertainty of some sort, a difficulty in deciding on the correct interpretation to make or conclusion to draw. So it suggests a homonymy. The etymology of ambiguity, 'both actions' confirms this: [one word with] two intents. The word 'equivocation' is more ambiguous. It is often in practice used as a synonym of ambiguity. This equation is suggested by the etymology of equivocation, which is 'same speech' – i.e. same word [though different meaning]. But the terms can also be distinguished, if we understand the equivocation as signifying: same [meaning, but different] speech. In this sense, equivocation is equivalent to synonymy.

It should be also be said that ambiguity and equivocation often occur on purpose, in the way of a deliberate lie, an attempt to fudge words or meanings so as to mislead oneself or someone else. But of course, they need not have such implications – they often occur in our discourse as mere expressions of inattention, ignorance or stupidity. In any case, it is clear that such confusions of words and meanings can cause havoc in reasoning. For instance, a syllogism whose middle term is ambiguous can lead to a false conclusion. Or likewise, if the minor or major term has a different sense in the conclusion than it has in the premises, we have an illicit inference. This is commonly called the fallacy of equivocation.

It should be added in passing, without here getting into a full theory of definition, that the example of "bachelors" (commonly used in the present context) represents only one type of defining act. In this case, we start off with a defining description, viz. "unmarried men", and then simply assign a name to the thing concerned (I call this deductive definition). However, in many if not most cases, we proceed in the opposite direction, *more inductively*.

We start with a vague notion that there is something there that we ought to name and study. We give the vague thing a name. This name is effectively all that "defines" it for us for now; it serves as a handle on the phenomenon, or as the memory box we will collect and store information about it in. Then we study the matter, empirically and rationally, describing it in various ways.

Gradually, we select one aspect of the phenomenon under study as its definition. This may be a categorical or conditional predicate, or conjunction of predicates, of any sort. For examples: (all and only) X are Y, or Xs do Y under conditions Z. We may later decide that choice was inappropriate for some reason (for example, the proposed definition may turn out not to be universal or unconditional, or not exclusive), and choose another part of the thing's description as its definition.[102]

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[102] For example, we had a word for "men" (i.e. human beings) long before we were able to define them. Aristotle proposed "rational animals" late in human history, and modern biology has proposed its own definition(s) long after. People were till then, and also today, still quite able to use and understand the word "mankind", on the basis of perceived similarities despite perceived differences, even though they did not have a verbal definition for it, or even think to define it.

If we examine this process more closely, we find it to function essentially *by analogy*. The importance of analogy in human knowledge cannot be overstated and yet is rarely mentioned. When we classify two or more things under a common concept or name, or otherwise relate them theoretically, we imply them to be analogous in some respect(s). New ideas and theories are formulated by successive analogies; they cannot be invented *ex nihilo*, without remodeling some preexisting experiential (and usually partly rational) material. In the case of inductive definition, a vague resemblance between certain phenomena serves as the motive force of our research.

With this alternative act of "definition" in mind, we can see the inadequacy of Kant's theory[103]. He just focused on just one process of definition, which superficially seemed "analytical", and ignored the more significant process just described, which is clearly inductive, i.e. manifestly "synthetic"[104].

Truth. It follows from such analysis – and here I use the term "analysis" in a more reputable sense – that the proposition "all bachelors are unmarried men" is in fact, beneath the surface, as synthetic, a posteriori and contingent as the proposition "all bachelors are happy". To claim "all bachelors are unmarried men" *is true*, we must believe that *there exists* something we previously called unmarried men. Even though the word bachelor is arbitrarily equated to the previous words, the underlying meaning is still called for to give it meaning in turn. If (and only if) the intended object seems to exist, is it reasonable to call such a proposition true.

At this stage, we have to ask: what of imaginary terms? For instance, in what sense is "unicorns are horses with a horn on their forehead" empirically based? Here, relation between the defined term and the defining term is the same as before, but the latter term refers to something imaginary. Nevertheless, such imagination is just a reshuffling of previous experiences. We have seen horses and have seen horns, and we put their memories together in a certain way in our minds eye (similarly with non-visual memories, of course). Had we not had physical or mental experiences (or abstractions from them) to ultimately refer to, we would have been hard put to give any meaning to the word unicorn. Our minds would remain blank with nowhere to go.

The word is thus meaningful to us, even though we do not claim it to be truthful, i.e. we do not claim it to refer to actual physical unicorns, note well. Thus, we can say that the definition of unicorns is superficially 'true' with regard to its equation of two sets of words, since it is entirely up to us to invent what word we choose as equivalent to the phrase horses with a horn.

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[103] And of certain related theories by some of his successors, notably the "logical positivists" in the 20th century. It is interesting to note the reflection of a prominent scientist in this regard: "extreme precision of definition is often not worthwhile, and… mostly it is not possible " (Feynman, p. 20). The reason it is "often not worthwhile" is because fixed definition would freeze our knowledge in a premature position: knowledge must be given the space and time to develop.

[104] It should be pointed out that when we have a vague, not yet defined word of this sort, it cannot be said that we are referring to its objects instead. This is said to avoid confusion with the later distinction (after Frege) between sense and reference. In actual practice, **the inductively developed word is vague *both* in its reference (we do not yet know all its objects) and in its sense (we are not yet sure which part of its eventual description will become the defining part)**. All we have to get hold of is a vague notion of some kind of resemblance between certain things so far encountered. It is important to keep this remark in mind.

But the proposition is decidedly materially *false* as a whole, since horned horses do not (to our knowledge so far, at least) exist outside our imagination. If one day such an animal is found in nature, or produced artificially, the proposition might then become true. Therefore, here again, we have a clearly synthetic, a posteriori and contingent proposition.

The word 'unicorn' refers to a relatively concrete imaginary phenomenon. There are of course more abstract imaginations. The word 'bachelor' would be an abstract imagination in a society where all men were in fact married. Nevertheless, when we examine more closely the terms 'men' and 'married', we still find some traces of visual and other sensory phenomena[105]. These traces come to mind and give some concrete meaning to the abstraction. The same can be said of an abstract term like 'noumenon'; it is not entirely devoid of empirical content[106].

It should be added that the empirical traces underlying abstract concepts may be intuitive (in my sense of the term - i.e. non-phenomenal), as well as or in addition to perceptual (i.e. phenomenal, in a mental or physical sense). For example, the concept of 'field of force' is essentially a construct that refers to experienced physical events like the motions of certain bodies in relation to each other, and we may use pictures with arrows to visually symbolize it. But it cannot be fully *understood* without referring to our own inner experience of volitional 'force' (our will), and to our mental sense of effort and to our various bodily sensations when we push or pull things or are shoved around by things.[107]

All propositions relating to meaningful abstractions, be they simple or complex, physical, mental or spiritual, are therefore also synthetic, a posteriori and contingent.

A true statement is necessarily meaningful – but so is a false statement. Note this well: a false statement is still meaningful; it is precisely because it is meaningful that it can at all be characterized as false. In such cases, the various words it contains are *separately* meaningful, but their *conflation* in a certain sentence (structure) is contrary to fact. If a statement is totally meaningless, it is neither true nor false, because it is saying nothing at all to us.

For example: "today's king of France is a monarchist" is false because there is no present king of France (since it is a republic), even though all the words involved in this sentence are meaningful and its structure is grammatically and logically adequate, and even though the predication of monarchism to the putative king makes sense in abstraction (though it is not inevitable, since a republican potential king is also conceivable). The truth involved could be expressed by transforming the categorical statement into a conditional one, saying "if France had a king today, he would most likely be a monarchist".

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105 For instance, marriage involves a certain public ceremony, a physical (verbal or oral) agreement, an exchange of gifts, and so on. These images & sounds come to mind to some extent whenever we evoke the concept, giving it some concrete ground. However, it does not follow that *only* such obvious memories are involved, note well.

106 If we carefully examine how we actually in practice picture that concept, we find that we project some vague images labeling them as outside or above or behind or beyond ordinary reality, i.e. as 'transcendental'. In other words, 'noumenon' depends on a certain amount of geometrical imagination to be intelligible.

107 In some cases, our personal valuations, like liking or disliking, or desire or aversion, are used as empirical undercurrents in the understanding of more abstract concepts. For instance, the value concepts of beautiful and ugly (aesthetics), good and bad (ethics) would not be fully intelligible without such subjective notions.

> Because I am writing for modern readers, I should here note in passing that the modern logician Gottlob Frege would have regarded a sentence like "today's king of France is a monarchist" as involving an empty term, a term *with sense but without reference*, i.e. with a descriptive meaning (an intension or connotation), but without an actual object to which the meaning applies (an extension or denotation). But it is inaccurate in my view to present the case in point in that manner.
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> The 'sense' is (only) part of the description, and the 'reference' is also (only) part of the description. For, note well, *we cannot indicate or visualize a particular object without awareness of some of its descriptive elements*; and in either approach, we never recall, imagine or point to more than part of the whole. For example, whether we imagine a king in power in today's France, or recall or see an actual such person, the mental content is almost the same.
>
> If we are alert to what actually comes to mind when we evoke the things defined or their definition, we see that there is no essential difference between the two mental events; either way, we think of *a few cases and a few of their characters* to direct our attention where intended. Whether they are real or imaginary, there are no characters without cases and no cases without characters. The difference between sense and reference is thus at most one of emphasis; very often the mental content is identical either way.
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> Frege's doctrine of sense vs. reference, one of the basic premises of modern logic, is therefore misconceived, because insufficiently attentive to our actual processes of thought. No wonder it led to the Russell paradox, which stumped Frege. The correct alternative is the understanding that meaning may be real or illusory, and must be one or the other, and that even the illusory is somewhat based on some reality (since it at all appears). With this understanding, one sees that one cannot string words together just any way, however one likes.[108]

As regards 'purely formal' abstracts, like the symbols X or Y used in logic or in mathematics for variables, although they are the nearest conceivable thing we know to analytic, a priori and necessary constructs, it is clear that *even they* depend on some experience, since if we could not instantiate them with some example(s), they would be quite meaningless to us. Logic deals with assertoric statements, or at the very least with wordless intentions. If nothing is explicitly said or implicitly intended, no judgment needs or can be made.

It is absurd the way some formal logicians or mathematicians ignore how their abstract constructs historically evolved, and what is required to make them intelligible in every new human being in every new generation. It is important for these people to keep in mind the distinction between the verbal level of thought and the underlying intentions and volitional processes it involves. It is important for them to focus on the deeper goings on (and their respective geneses), and not get dimwittedly stuck in superficial matters.[109]

For example, the form "S is P" (subject is predicate) is a convention, in the sense that the order of the symbols or words "S", "is", "P" is not very important, what counts is their meanings. We could (in English, and no doubt in other natural languages) place them differently, as "P is

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[108] See my *Future Logic*, chapter 45, on this topic.

[109] This remark corresponds to the distinction between "surface" and "deep" grammar by Noam Chomsky. The surface may change, but the deep stuff stays the same.

S" or "P S is" or what have you. Such changes of position are found in poetry and especially in old English (for example "blessed are the meek"). We convene "S is P" as the standard order, so as not to have to keep explaining what role each of the words is meant to have[110]. Such formal rules are practical, rather than theoretically significant or merely (as some moderns contend) arbitrary.

In sum, it is doubtful that *any* propositions can be characterized as analytic, a priori and necessary in the precise sense Kant intended. All human knowledge needs have and does have some empirical basis, however indirect. Otherwise, it is not true knowledge, or even false knowledge, but merely meaningless noises or doodles. It is "idealistic" in the worst sense of the term, i.e. divorced from any and all reality. Certainly, almost all knowledge is rationally processed to some extent, but *it is impossible to entirely separate the purely rational elements from the purely empirical elements* as Kant attempts.

***A priori* forms**. Now let us consider an actual example of Kant's: "all bodies are extended". The reason I left it till last is because it involves more complex issues.

What is evident and sure is that we would not be able to formulate such a proposition if we had no experience of a world with bodies extended in a space, or at least of an imaginary such world. For we could well have been born in a world where we experience only one thing, viz. just light (or even, just darkness or a dimensionless point); we would still be conscious in that context, but would have no experience or imagination of extended bodies. It follows that this proposition of Kant's is in fact quite synthetic, a posteriori and contingent.

Here we touch upon Kant's theory of (imposed) "forms" of sensibility and understanding, according to which our cognitive faculties supply certain non-empirical factors of knowledge (notably space and time, and causality, among others). These components of knowledge are, according to him, *both a priori and synthetic* – that is to say, they are purely 'rational', in the sense of 'known independently of any experience', and yet *somehow* give us true information about the world, the immanent world.

In truth, we cannot rationally predict experience without any appeal to experience. Space (in at least two dimensions) and time, and likewise causality (i.e. causation, in this context) and many other abstractions, which Kant regards as categorizations imposed on experience by us, are all based on some experience and never on reason alone. Reason cannot function without some experience.

For (to repeat) we might well have existed in and experienced a unitary world without shapes and sizes or distances, without movements or other changes, and without concatenation of events (and a fortiori, without the negations of such things and events) – and then we would never have been able to understand such concepts.

Therefore, such categories are not mental formats that somehow impinge on and structure experience *before* we actually take cognizance of it. They are rather *given in experience and taken from it*. They are ways we mentally order experience *after* the fact, i.e. after we have already experienced it (and we so order it so as to more efficiently think about it and deal with it in action). They are a posteriori, not a priori.

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[110] Similarly, the order of antecedent and consequent is conventional; i.e. it could be, and in practice often is, reversed (though the underlying intention remains the same).

Moreover, space, time and causation are not only applicable to sensory experiences. They are also applicable to mental experiences. It is true that apparently material bodies are visibly extended in 'space', go through visible changes in 'time' and often occur in visible conjunctions, i.e. with 'causation'. But these visual properties are not reserved to the seemingly material domain. They are also applicable in the mental domain. The images we imagine (while awake or in dreams) are also evidently extended and changing, and sometimes conjoined and sometimes not.

We should also keep in mind that the seemingly 'external' and 'internal' spaces, times and causal chains might or might not be the same or interactive. It follows that if Kant's motive in proposing these forms was to differentiate sensory experience from imaginary experience, he failed – because there is no differentia in their use in either domain. It follows too that these forms cannot be used to explain how or why 'physical' experiences are transformed into 'mental' ones – because if this were the purpose of such forms, why would they also be used on mental experiences?

Thus, "bodies are extended" cannot be proposed as a complete definition of seemingly material bodies, as against mental images, with reference to the visual experience of extension *alone*. It may suffice for mathematicians, but it does not for phenomenology-inclined philosophers. To define such bodies, we *also* have to refer to touch sensations, especially the experience we have of resistance to pressure by apparently material bodies. Mental images of such bodies do not have this tactile aspect, because (it seems to me) we are unable to concretely imagine touch.[111]

Another point worth making here in rebuttal of Kant is the very fact of his communicating with us through his writing. When he says: "bodies are extended", he is assuming these words mean something to us, and moreover the same as they mean to him. He claims this something is purely rational (i.e. "analytic"); but as indicated above such claim is logically untenable, because words must ultimately (if not directly) at least refer to an imagined experience, if they do not refer to a physical one. Words without *any* experience whatever anywhere behind them are meaningless, i.e. devoid of content.

Both he and we must refer to common experiences to understand the words, and to share them. Whether these experiences are of a physical world or a merely mental one makes no difference, provided we have a domain in common. If he was (as logically he may be taken to imply) fundamentally isolated from us, both physically and mentally, in that "bodies", "are" and "extended" were purely rational terms, he couldn't communicate with us on this issue. We would have no shared ground, no channel of communication.[112]

Conclusion. The analytic/synthetic and a-priori/a-posteriori dichotomies have some traces of truth in them, in the sense that human knowledge is formed by both reason and experience. It contains both deductive and inductive components. But these components cannot readily be

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111 Kant would presumably add substance (in the sense of subsistence) as an essential attribute of bodies. But I leave this complex issue out of the present discussion, since I deal with it in other contexts (notably, with reference to Buddhist doctrines).

112 Of course, I could argue that Kant is a mere figment of my imagination. This is the solipsist hypothesis, which is not easy to disprove deductively, but which may reasonably be considered unconvincing given the degree and richness of imaginative power it presupposes one to have.

separated; they are too intertwined, too mutually dependent. Some partial separation is of course possible, but not a thorough separation such as Kant attempts. Nothing is purely deductive or purely inductive.

Even the laws of thought, the principle of induction, and various other generalities of formal logic, depend on experience for their meaning and for our understanding of them. Before we can say "A is A", or find a statement to be paradoxical, or differentiate between truth and falsehood, or make a syllogistic inference, or understand what any of the preceding means, we need to have some experiences[113]. Our cognitive faculties cannot function without content, just as our hands cannot manipulate anything if they are empty.

The logic proposed by Kant *does not correspond to the logic of actual human discourse*; it is a mere incoherent invention of his. He may have pretentiously called it a critique of pure reason, but I would call it an impure critique devoid of reason. If he describes reason erroneously, he is logically bound to end up with absurdities like the unbridgeable gulf between things-in-themselves and things-as-they-appear. But such difficulties are not the fault of reason; they are the fault of (his own) *un*reason.

Nevertheless, Kant has been hugely influential on modern logic. The pursuit by many modern logicians of "formal systems" that are freely developed independent of experience may be regarded as an enterprise inspired by Kant.

The logical-positivists[114] were mostly German logicians, functioning under Kantian premises. It is not therefore surprising that most of them (with the notable exception of Kurt Gödel, who was their nemesis from the inside[115]) adhered to a philosophy paradoxically composed of both extreme rationalism and extreme empiricism at once; that is, a philosophy upholding reason apart from experience and empiricism apart from logic, "and ne'er the twain shall meet"[116].

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[113] I am always amused and amazed by logicians or mathematicians who think that they can manipulate "pure" symbols independently of all experience. They ought to stop and consider, for a start, their own experience of those symbols and of the actions they personally perform with them. They are writing on paper (or an a computer), are they not? They are hoping other people will read their stuff (and agree with them), are they not? All that is experience, too, and cannot be dismissed as irrelevant.

[114] Including here (for the sake of argument) members of the Vienna Circle and the likes of David Hilbert, Ernst Mach and Ludwig Wittgenstein.

[115] I must here give thanks to Yourgrau's account of Gödel's work, which (partly because of its semi-biographical format) has considerably changed my opinion of Gödel's importance in the history of logic. My few past comments on this logician, in my *Future Logic*, might have seemed disparaging, because I assumed him to be essentially an ally of the formalist Hilbert. Yourgrau's book has taught me that Gödel was consciously critical; i.e. that he did not merely stumble on his anti-formalist theorems, but purposely pursued them on principle. I see now that he was indeed a great logician, because he permanently defeated the modern proponents of a purely deductive logic on their own terms.

[116] To be more precise, they sought to adhere to logic, which they essentially understood as *deductive* logic, and they largely ignored *inductive* logic, which is precisely the tool through which reason assimilates experience. So-called formal systems are artificial concoctions, in that they arbitrarily simplify the complexity of logic (i.e. human discourse), by attempting to reduce it all to a manageable number of axioms and rules from which all theorems can be proved. This abstract and mechanical approach to logic may seem interesting to some people, but it is in fact just narrow and rigid in its mentality. It prematurely blocks research into all the manifold aspects and dimensions of our natural logical discourse, just so as to satisfy a penchant for order and finality.

3. Theory of knowledge

From the start, Kant wrongly defined the components of human knowledge as "**representations**". This seemed obvious to him, considering the philosophies of Locke and Hume that preceded his, with their belief in sensory "impressions" and derivative "ideas", which might or might not have been caused by and in principle correspond to (i.e. *re-present*, *present again*) material objects external to the subject. For Locke, the answer to that question had been yes, whereas for Hume it had been no. Kant was trying to revive Locke's yes after Hume's no, by building a more complicated system of justification.

Kant considered representations as of two kinds: intuitions[117] and concepts; the former are "immediate" representations and the latter "mediate". Representations could be "pure", i.e. entirely *a priori*, pre-empirical in origin; or "empirical", i.e. a posteriori, dependent on experience. **Pure intuitions** are those that give all other perceptions their forms. These are the "**forms of sensibility**", namely intuitions of space and of time, which turn our disorderly sensations into actual perceptions. **Pure concepts** are those that similarly give their basic forms to conceptual knowledge. They are the "**forms of understanding**", namely the twelve "categories" listed by Kant on the basis of Aristotelian logic.

All this of course must not be taken on faith by us, but must be regarded as an inductive hypothesis, a mere theory proposed by Kant. But to his mind, it was the only conceivable way human knowledge could be saved from the logical doubt Hume had instilled. Kant's reasoning was that, since knowledge could not be securely based on empirical grounds alone, it was necessary to ground it in some sort of constitutional necessity. Instead of the traditional view that space and time and categories like substance and causation are abstractions from experience, he proposed a theory of *structural conditioning*. This was not an appeal to innate basic ideas, note well, but rather a sort of *cognitive determinism*.

Following Aristotelian and earlier philosophy, Kant distinguished between matter (here, I suggest, meaning phenomenal content as it appears to us, whether judged material or mental) and form (meaning the abstract aspects of knowledge, the ordering of appearances by reason). The former is known (directly or indirectly) through sensation, the latter by logic. The study of the sensory aspects of knowledge Kant called "Aesthetic"[118], and that of the logical aspects is called "Logic".

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[117] Nowadays, the word insight might be preferred in this context to that of intuition, which has a much more subjective feel to it. I use the term intuition preferably only in the context of self-knowledge. However, some people still do use the term in a Kantian sense.

[118] The modern sense of that term is of course, the study of (the impressions and concepts of) beauty or ugliness.

Kant qualified his theories in those fields as "Transcendental", ostensibly because he believed in pure/a-priori intuitions and concepts, as already mentioned. However, his use of this qualification was also intended to suggest his theories were justifiable as it were 'from above' or 'from the outside', and therefore were superior to anyone else's and beyond anyone else's capacity to criticize.

Kant's vision of knowledge has some credibility, because it of course contains many truths. The trouble is that it also contains many misconceptions and wrong emphases, which lead to great difficulties and inconsistencies. In some respects, Kant's understanding of human knowledge was true to tradition; but in many issues, though he often took up traditional terminology, his interpretations were quite bizarre. Novelty is of course no sin, but in some cases it is based on foolishness.

In truth, knowledge is not only based on experience, but also on logic or reason. If knowledge was limited to experience, that is all it would contain. We do need some additional ingredient to turn experience into conceptual discourse; and that is not some presumed processing by machine-like faculties, but simply the *volitional* application by the subject of all the laws of logic (whether these are realized *ad hoc* through personal insight, or known through wide-ranging in-depth theoretical study[119]).

To be an empiricist is good, if we understand by that that all knowledge must be anchored in experience. But to be an empiricist *only* (as Hume had the ambition to be) is bad, because that posture ignores the rational element that turns experience into conceptual knowledge. Indeed, to be an empiricist only is impossible – it is only made to seem possible by concealing one's debt to rationality.

Rationality is needed even to argue for a philosophy of pure empiricism, which means that such a philosophy is inherently not purely empirical. One must admit some rationalism, to be able to at all discourse, and to take the influence of logic into account. Inversely, to be a rationalist *only* is also bad and impossible, as this implies ignoring experience or hiding one's debt to it. Without experience one would have no content to reason about.

Thus, *empiricism and rationalism should not be pitted against each other, but allied and harmonized*. Kant understood this need and built his system with it in mind. His intentions were laudable. The trouble is that he denied the *joint* input of experience and reason in *some* items of knowledge. Only the so-called empirical intuitions and concepts were each part empirical and part rational. The so-called pure intuitions (of space and time) and pure concepts (of the twelve categories) were all to be *purely 'rational'*, devoid of any dependence on experience. They were forms of sensibility and understanding known prior to any content, by virtue of our possessing cognitive faculties.[120]

These basic intuitions and concepts were *not form drawn out from content*, abstracts isolated from experience, as Aristotle had suggested. Instead, according to Kant's "Copernican revolution", they *gave form to content*; they independently shaped experience in humanly

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[119] Which theory is of course based on many people's personal logical insights, let us not forget. There is no theory with "transcendental" validity, above human effort, experience and judgment. Not even logic makes such claims for itself.

[120] Strictly speaking, we should not accept the label of 'rationality' with reference to Kant's a-priori forms. Reason presupposes and implies volition, and Kant's a-priori forms are mechanical impositions on us. The two concepts are really antithetical.

sensible and comprehensible ways (with no obvious guarantee of accuracy). In my view, Kant's theory was not without intelligence – humans do add something to experience, and we should be well aware of it; but he misconceived precisely how this might occur, since his theory gave rise to possible and actual difficulties and contradictions[121].

We can and must, in my view, reaffirm that the basic intuitions (of space and time) and concepts (of the twelve categories) are both *empirically and logically* based, and not purely rational as Kant proposed. The missing element in Hume's solely empiricist vision of human knowledge is the volitional logical *work* that orders and organizes experience – it is not some blind *mechanistic* imposition on experience as Kant implies. Space, time, causation and other basic concepts are not forced upon us, but are convictions acquired by personal application of logical insight to experience.

Perception and conception. Let me here propose an alternative theory as to what conceptual cognition "adds" to perceptual cognition, so that no misunderstanding arise from the above statement of mine, and so that the "grains of truth" in Kant's theory are highlighted and at the same time the "husk of falsehood" are separated out of it.

In Plato's Idealist philosophy, form is totally separable from content (matter or substance), ontologically and not merely epistemologically. In Aristotle's more down to earth rebuttal, form and content are ontologically inseparable, though epistemologically distinguishable. Kant was in that respect clearly closer to Plato, though distinct in other respects. My view is closer to Aristotle's, though not identical with it.

In my view, *all perception is immediate*, not just perception of space and time; and indeed, space and time are far from entirely perceptual items of human knowledge. Furthermore, *all conception is mediate*; and it cannot be said that any of the categories Kant lists are entirely a priori concepts. *No percept or concept is entirely purely rational or a priori*; all items of knowledge rely on some empirical data, some contact with some aspect of reality. Kant's proposed divisions of knowledge can only result in divorcing the subject from the object, or human beings from reality, and thus lead to intractable paradoxes.

Rational acts, such as affirmation and negation, measurement, comparison and contrast, all do indeed depend on human intervention. Things just are (whatever they are, whatever they happen to be) – they never exist negatively or primarily in relation to others. Qualitative and quantitative similarities and dissimilarities do not exist if they are not perceived or conceived *by a subject*; they remain latent if they are not made objects of someone's *consciousness*. Yet at the same time, they are objective and not subjective, in the sense that whether potential or actual they are still "properties of" the object.

Without some conscious subject, the potential sameness or difference of the objects would never be "brought out". But the subject does not merely fantasize such abstract properties; it refers to observations of the objects concerned. Rational acts only actualize a potential that

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[121] Notably, the question: how would Kant obtain knowledge of his system of knowledge if his mind was really functioning the way his system claims? How would he *overview* space and time or causation and other categories, if he could not refer to them beyond his mind? He denies humans access to ultimate reality, yet claims for himself just such access in the very act of doing so. It is such failures of reflexive thinking that makes Kant's philosophy incredible.

already potentially "belongs to" the object, they do not create something at random. More precisely, such abstract characteristics are concrete mental phenomena produced by the subject in his/her mind *with reference to* observations of certain objects, under various conditions of the subject (e.g. position in space and time during observation) and/or objects (e.g. placing a ruler on them, or looking at them with a clock in hand, or making other experiments with them).

So we can accurately say that abstractions relate to the object, are about the object – for the object causes them in us, and such causality by the object counts as an objective property of the object. Although such abstract properties of objects cannot become manifest if no one is conscious of them, it does not follow that they are pure figments of the imagination, for the consciousness involved is primarily beamed at the objects concerned. The potential existence of the abstracts in the subject's mind may be regarded as part of the overall 'nature' of the objects. The nature of an object is not only what is inscribed in it, but its whole place in the universe, i.e. its possibilities of relation to and action on other things.

A '**property**' need not inhere *in* the object; for we may also count as an object's 'property' a thing (whether physical or mental) that exists *in some other* object (including a subject) provided that thing is somewhat caused or influenced by the first object. The term property can and must thus be understood even more broadly, with reference to *anything that relates in any way to* (e.g. is an effect of) the object at hand, and not just to things that seem to be residing within it[122].

Once this is understood, many of the difficulties encountered in epistemology and ontology fall away. Note this comment well, because it is of earth-shattering importance to philosophy. Whatever the objects we perceive or conceive cause or influence ***in us*** may be considered as properties ***of theirs***. Simply because the concrete residence of the property is outside the objects concerned, does not per se make them less of a property of theirs. That the effect the objects cause is in us, the subjects, does not make the effect any the less theirs.

- In the case of ***perception***, some concrete (phenomenal) aspects of an object are *directly* cognized by the subject. In the case of a physical object, the perception is (we may legitimately hypothesize) *as direct as* in the case of a mental object; that is to say, it does not occur through the intermediary of any sensory impressions or ideas (that is not the function of sensations and ideas): i.e. it is not perception of a mental object "caused by" or "representing" the physical object, but perception of the physical object *itself*, note well. It

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122 In my book *Future Logic*, chapter 45, I demonstrate that the Russell paradox is due to overly hasty "permutation". Since permutation sometimes leads to paradox, it cannot always be performed. From this we can infer that a property of something does not necessarily reside in that thing. In some cases, then, the relation between two things should rather be viewed as an abstract bridge between them, i.e. as something existing outside the both of them. An important other example of impermutable proposition is the form "X is potentially Y" (regarding this, see chapter 67 of the same work). Regarding the form "**X has Y**", which we usually associate with property, note that it does not always imply that Y resides in X. In some cases, e.g. in the case of "some roses have pink color", the predicate (pinkness) is thought to be part of the object (these roses). But in other cases, we do not intend such an implication; e.g. "John has a wife" does not mean the wife is in John, but signifies a complex and largely abstract and even conventional relation between two separate entities. *It follows from this that the form "X is Y" is also twofold in meaning*, note well. Thus, "some roses are pink" suggests to us that the predicate pink is in the roses, but "John is married" does not mean that the quality of being married resides in John.

is due to this directness of perception that we can test our conceptions (and say whether or not they sufficiently "correspond to" the objects concerned).

- In the case of ***conception***, however, cognition is *indirect*. That is, what we cognize is a concrete *mental* phenomenon (called an abstraction) that is *produced by* some concrete physical and/or mental phenomena under perceptual scrutiny. Because the concrete mental phenomenon so produced is *causally related to* the concrete physical and/or mental phenomena under consideration, it is regarded as an external property of theirs. Such a property *outside* an object in another object (here, a subject's mind, in the case of physical percepts, or another part of the same mind, in the case of mental ones) is called 'abstract' to distinguish it from the 'concrete' properties perceived *in* it.

The 'property' under consideration here is **abstract**, because it consists of a causal relation (a causation or influence), plus a term, viz. the objects perceived (the cause or influence), and is not to be confused with the other term, viz. the mental phenomenon that it concretely consists of (the concrete effect of the objects in the mind of the subject). Thus, we say somewhat conventionally that what is cognized in conception is not (entirely and exclusively) phenomenal, yet it is related to perceptual aspects of the objects concerned, it is something to do with or about them that is known indirectly.

Note well that though an abstract property does not strictly exist out there in the objects concerned, it is still (if well formed in accordance with logic) an *objective* fact in that the concrete effect the objects cause in any subject's mind indeed do exist there and do "belong" jointly to the objects and the subject. Note too that though the abstract resides in the subject's mind, it is *not subjective*; it is not something injected into or projected onto the objects by the subject (or the consciousness emanating from the subject), or something existing in the subject's mind in detachment from the objects (though it may be the latter, if logic has not been applied correctly).

In other words, if and so long as our knowledge is based on observation of the objects concerned, and is processed by inductive and deductive logic to the best of our ability, we can confidently rely on it. Though this knowledge is in us, it can under these reasonable conditions be considered a property of theirs. In this sense, the knowledge, though it is in us, and processed by us, is quite objective.

Only by such harmonious blending of reason and experience can we hope to avoid transcendentalism or idealism. Kant's attempt to reconcile reason and experience did not sufficiently stress the mutual dependencies of reason and experience; he kept the two much too far apart. An abstraction is neither phenomenal nor noumenal. It is not exactly perceptible, yet it is not out of this world. It cannot be reduced only to percepts, but it cannot be altogether divorced from percepts. And so on – this is the more subtle line of thought needed.

4. Experience, space and time

Among Kant's fundamental errors was his assumption that empirical data is initially without unity, being a confused mass of myriad sensations, and that it needs to be united by rational means of some sort, *before it can at all constitute an object of perception*.

On this basis – and the use of many arbitrary assertions and woefully circular arguments[123] – he argued for the primacy of his a priori "forms of sensibility" (pure intuitions of space and time), i.e. that such "knowledge" of space and time is antecedent to (if not precedent to) any experience to which they are applicable and which they sort out and explain.

On what basis could Kant possibly claim to know that raw data is not unitary and needs unification, if he denies the possibility of access to raw data without a priori categories? How would he know about raw data and about the a priori forms, without reference to them first? How would he explain and justify his claim? Such a claim on his part is (if not plainly self-contradictory) of necessity arbitrary; it constitutes a hidden first premise of his philosophical system that he treats as axiomatic without valid reason. There is nothing obvious or absolute in this assumption of his. It is an unnecessary complication and mystification of the theory of knowledge. No transcendental knowledge of any sort is involved, but just say-so.

On the surface, Kant's supposition that sensations need to be integrated before perception becomes possible might seem reasonable. If the perception is as commonly described perception *of mental products of* sensations, i.e. if what we perceive are presumed "representations" rather than the presumed external causes of sensations, then indeed one would expect some mechanism to fuse together the myriad sensory impressions (of the various sense organs, and the many parts of each sense organ). In ancient philosophy, this was called the "common sense"; in neurology, one would refer this task to the brain.

However, this explanation of the role of sensation is a far from certain *theory*. Indeed, as I argue repeatedly here and elsewhere, it is an internally inconsistent and therefore untenable one. But even ignoring the paradox it entails, just consider the empirical facts involved. We cannot credibly even suppose that sensations are numerous and complex enough to produce images, sounds and other phenomena *as rich as* those we encounter in perception of physical objects.

When in my daily walks I look at the blue sky, the mountains, the lake, the greenery, the passersby and the colorful ducks, I do not for a moment suppose I am seeing images of such

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[123] Which I will not get into the details of here – to avoid turning this essay into another thick book. Some replies to Kant's arguments are effectively given in this section further on, when I present an alternative thesis.

things great and manifold in my head, but naïvely consider that I see the things *themselves*. To opt for the hypothesis of images would mean that I am producing or reproducing in my mind an enormous quantity of data; just think of the amount of information involved in such an experience. Why suppose I am experiencing a parallel universe in my head, when I can *just as easily* suppose that I am seeing the universe itself? There is a difficult hypothesis either way, so why not opt for the simpler, more obvious supposition?

If philosophy has any need of a "Copernican revolution", this admission of *perceptual realism* (as against the prevalent perceptual idealism) is surely it. It is a revolution much more radical than the one Kant proposed, and much more convincing.

This natural supposition of the common man seems much more reasonable than the one proposed by philosophers and scientists. It compares the qualitative and quantitative characteristics of what we call mental phenomena and what we call physical ones. The contrast in clarity and complexity is all too evident, and sufficient to suggest *direct* perception of external objects. It is true that some dreams we have are very sharp; some so much so that they seem like 'visions'. But the large majority of visualizations and dreams are rather vague or approximate. Sensations could never conceivably suffice to reproduce the reality we routinely perceive.

Indeed, some scientists have expressed surprise at the simplicity of sensory messages (electrochemical processes in the nervous system), compared to the complexity of the content of consciousness they are supposed to produce. This suggests that ***the process of sensation has little if anything to do with perception as such, but rather concerns memorization***. Through perception, we independently judge the correctness and reliability of our simultaneous memorizations. Without this distinction, we would be hard put to explain how we evaluate individual memories, and judge them right or wrong; all memories would be uncertain, impossible to evaluate.

Memorization is what makes imagination possible. Imagination is only possible after and as a consequence of memorization, in the way of a rearrangement of memories of experiences or of abstractions from such memories. Mental phenomena are – it is much more reasonable to suppose – merely weak and imperfect reflections of physical phenomena. Imagination, the willful recombination of memories, does not affect what we perceive, but only what we remember. Imagined theses, i.e. hypotheses, can be tested because we can refer to perception independent of memory; if we had no direct perception of externals, but only apparent memories, it would be useless to recombine them, because we could never test them.

Memory of an experience is not identical with the experience. The experience is primary, a given; the memory is secondary, a construct out of sensations. Apparent memories of external objects could not properly be called memories until they are validated through independent, direct perception of those objects. Until then, they have the logical status of mere "impressions or ideas" (to use Hume's terminology) – i.e. they are just mental items, themselves not validated and therefore incapable of validating others. This is of course the 'grain of truth' in Hume's theory, which gives it some power of conviction. But the 'husk of falsehood' in it is Hume's willful failure to take direct perception into consideration, which results in self-contradiction.

Memories can be 'good' or 'bad', i.e. accurate or inaccurate renditions of certain experiences. Memories can in time deteriorate (or be lost); we can also train our memory to improve. We

judge memories with reference to the experiences they claim to represent or correspond to, using *adductive* techniques – which means we regard them collectively as somewhat hypothetical. We can instinctively[124] usually tell the difference between a memory and an imagination, but sometimes the latter are confused with the former. This is why we need adduction based on actual experience: to objectively judge the difference.

Mentalists and subjectivists express incredulity as to the possibility of direct consciousness of objects, and aver instead that cognitive processes necessarily produce mirages. It is unthinkable in their view that we directly perceive *physical* phenomena, but quite conceivable that we directly perceive *mental* phenomena. I ask: why this prejudice? Surely, the latter is *as amazing and inexplicable* as the former. In either case, consciousness of one thing by another is something best described as miraculous, for lack of a better word – whatever the presumed substance of its objects or distance from the subject. If we lose this sense of wonder, and regard consciousness as just some other routine "phenomenon", we are skimming over something very, very surprising.

Those who prefer inner perception to outer have no argument in support of their thesis. The very distinction between inner and outer depends on the presupposition that we can tell a difference between them, *if only in appearance*. It follows that, at a phenomenological level, inner and outer – i.e. mental and physical – are on the same plane, equally capable of being the true state of affairs. There is no *a priori* or *ab initio* basis for a prejudice, one way or the other; the issue can only be resolved in a wider context, with the help of inductive logic.

The **phenomenological** truth of human knowledge is exactly the reverse of how Kant views it: first we experience raw data, and then only do we mentally process the information so obtained. Raw experience is *experience of the totality of the here and now within the immediate range of one's consciousness*. It is essentially pure of rational interference, though reason is quick to try sorting it out almost as soon as it occurs. Thus, experience is initially unitary and only in a second phase is it *rationally* made to explode into seeming multiplicity, with variations in space, time and circumstance.

> This is a truth evident to anyone who has practiced meditation to the stage of contemplation. **One is constantly in the here and now, even though the scenery around one changes continuously in various respects**[125]. In this cognitive posture, one is observing without comment of any sort (verbal or non-verbal). And indeed, even if thoughts do arise, they are viewed as just part of the scenery. The non-here and/or non-now are mental projections in the here and now; we here and now remember or imagine things beyond the here and now.
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> The self *in fact* always resides in the here and now, even if its attention is usually strongly drawn towards some place else and/or some other time. There seems to be a natural force (of varying intensity) pulling us away from the here and now, perhaps for biological reasons of survival. Nevertheless, through a contrary effort of stillness and

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124 That is, by introspection or intuition, perhaps by "feeling" the different ways they are stored in the brain.

125 This perspective perhaps explains the Zen *koan* "Bodhidharma didn't come to China" (Dogen, p. 152). It means: China came to Bodhidhama. That is to say, the stream of appearances associated with going to, being and traveling in China, *including* the appearances of Bodhidharma's body in the midst of these geographical locations, was present in front of (or all around) him – but he never moved, never went anywhere (other than where his soul was all along).

> silence, we can volitionally bring our awareness back in the here and now; and with much training this can become a habit.
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> Buddhist psychology has, in my view, well explained what it is that draws us out of the 'here and now' into the 'there and/or then'[126]. It is the pull and push of desire (and aversion). We cling to (or away from) some passing content of the ever unfolding here and now, and become absorbed by it. Our attention becomes locked onto it for a while, fed by and feeding memories and fantasies. To avoid this malady, it is necessary to practice non-attachment.

The content of raw experience is essentially a continuous field, not only at any given moment but also from moment to moment. The division of experience into moments is already a rational act; experience itself is one across time. More precisely, experience is only of the present, and any consideration of past (memory) or future (anticipation) is rational rather than experiential. We are always in the present, whose changing appearance is all part of the present. Mental impressions of memory or anticipation may float over more present-seeming appearances, but they must be regarded phenomenologically as in the present too, and only separated out of it by rational reflection.

Similarly, the imaginary cutting up of the visual and other phenomenal fields into distinct parts – and on a later, more abstract plane, the distinction between whole and parts of space as such – this is rational activity that comes *after* actual experience. Such rational acts presuppose phenomena to act on, and therefore must lag slightly behind the experiences they are applied to. Nevertheless, they do not necessarily rely on memory, because what we experience as "the present" is not an instant, but a moment of time – i.e. the present has a temporal extension, it is not a mere point in time.

Thus, it is we who mentally cut experience up and then bind it together, through various rational acts. These acts occur in the present, like all existing things and events. Before we can locate 'parts' of experience variously in space or time, or classify them together in any way, we must differentiate them from each other. For example, we may choose to consider visible blobs of colors as distinct things; thereafter we may regard these items as spatially or temporally separate, or this color and that one to be the same or at least similar (the same to some extent but differing in shade, say).

It is clear from such analysis that locating things in space and time is a relatively complex act of reason. Before we can actually give things spatial and temporal dimensions (positions, shapes and sizes), we have to engage in numerous simpler acts of dividing and discriminating, equating and differentiating, comparing and contrasting, isolating and reassembling. Note that all of these acts involve affirmation and some involve negation; they constitute rational judgments based on experience. But note too that none of these judgments need involve words, though they often do so because this facilitates them (especially when they are numerous and tangled).

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[126] Which we might identify with *nirvana* and *samsara*, respectively (though I do not pretend to have personally consciously experienced nirvana). Many useful illustrations are suggested by Zen masters in this context, such as: the still and empty self experiencing passing things and events is likened to *the hub of a wheel*; imaginations relate to other objects of experience like *clouds in the sky*, floating around in the foreground without really affecting the background. Note that the here and now is not a narrow expanse: since it has no boundary, it is potentially and therefore ultimately the "*vast emptiness*" of all space and time (to borrow a phrase from Bodhidharma in Dogen, p. 138).

Kant would regard all such rational acts as involuntary a priori characterizations of experience, but they are clearly not that. They are essentially voluntary acts of conceptualization, of various degrees of complexity. Usually, such acts are so deeply habitual that they are almost automatic. But in truth, they cannot be claimed automatic, because: (a) very often we lazily skip doing them altogether, and (b) if we do choose to do them, we must make a conscious effort to get them done.

Generally, the simpler conceptual acts tend to be done unthinkingly, whereas the more complex ones require more of an intellectual effort. No doubt, Kant was partly misled by this common observation into regarding space and time as "intuited" instead of as conceived. Contrary to what Kant suggests, no conception is needed *to experience* raw data. Concepts are later cognitive tools, used to organize the data *already* experienced, so as to draw inferences from it and build theories around it in pursuit of further information. They are thus far from a priori building blocks of human knowledge; they are quite a posteriori.

Kant proposed his theory of the forms of sensibility (space and time), as well as the forms of understanding (the categories of causality, etc.), in order to explain and somewhat justify our apparent knowledge of a material world beyond our senses, i.e. in the way of an attempt to mitigate Descartes' mind-body dichotomy and Hume's problems with induction[127]. In fact, however nice their motive, his proposals aggravated and perpetuated these philosophical difficulties.

Kant suggested, *simply because he could think of no better explanation and justification of external knowledge*, that reason molds experience in accord with these forms. According to this view, the forms of sensibility act on incoming experience in the way of a pigeonhole, and therefore of a straightjacket. But his assumption of forcible limitation naturally implied a distortion of experience by our faculties, for what is limited somewhat is necessarily twisted out of shape – i.e. it is other than it would otherwise be.

In Kant's view, if the forms did not structure the raw data provided by the senses, experience would not be at all possible. He thus pretentiously claimed to know and to tell us "*what* makes experience possible". But his theory certainly does not greatly elucidate that mystery, and it is doubtful anyone could answer such a question in sufficient detail. In any event, it is untrue that we need to know how experience arises in detail before we can at all rely on experience.

That experience is possible is given by the simple fact that it is, i.e. that we have experience. Experience is empirically given. There is no logical need for any other proof that it is possible! As for the reliability of experience, this is not something that can be proved by deductive means as a starting point. It is however something that can be reasonably assumed to begin with, and ultimately credibly established by use of inductive logic.

The argument in favor of experience would go as follows. Experience (whether by inner or outer perception, or by intuition) is *all we have* in the way of concrete content of consciousness. *There is nothing else to refer to* – for abstractions have no existence without previous experiences, i.e. they are evidently rational *derivatives* of experience.

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[127] One of Kant's motives in formulating his doctrine of space and time seems to have been to differentiate the two phenomenal domains, the physical and the mental. But this is not truly possible, because these concepts have instances in both domains equally.

Our abstract knowledge is simply an attempt to report and remember relatively briefly what we have found in experience so far and to try and anticipate what may come into it later. Such knowledge is mostly tentative – i.e. it may be right or wrong – and the way we determine its validity in each case is with reference to both experience and logic.

If experience is taken phenomenologically, as mere appearance, this starting point is quite sufficient, for it in fact *assumes nothing beyond itself*. Once we have experienced something, we *know* what we experienced, and (provided we remember it and remain lucid and honest about it) we will not be fooled by fanciful abstract constructs.

There is of course a need to distinguish between different types of experience: immediate experiences (whether material, mental or spiritual), and their derivatives, viz. memories, imaginations and anticipations (all of which are mental). Such distinction is partly evident at the outset, with reference to the character and intensity of the experiences, and partly the result of later ordering in accord with inductive logic.

There is no rational realm floating in the air, above, below, before, behind or beyond the realm of experience. The rational realm is an outcrop of the realm of experience. Reason helps humans make sense of the world of experience, *after the fact*. It cannot per se affect, modify or distort experience, because experience (i.e. our experiencing) invariably precedes it.

Reason needs something to act on before it can act at all; it cannot produce experience and it has no power to affect what has already presented itself to us. Reasoning always occurs *in relation to* some given content of consciousness, in response to some occurring or occurred experience. Reasoning cannot exist *apart from* some object of consciousness to reason about. This is true at all levels and in all areas of reasoning.

Consciousness per se has no phenomenal attributes, note well. It is the transparent *relation* between us (the Subjects of consciousness) and our percepts or concepts (the concrete or abstract objects or content of consciousness).

From this phenomenological ground, and the attendant deductive and inductive logical insights in accord with the laws of thought, we can gradually build up a reasonably true to experience body of knowledge. Reason is an efficacious tool of knowledge, if used with due regard to experience and logic.

Kant on the contrary believed that space and time cannot be found in or grasped from experience, and so can only be explained as impositions of specialized faculties that integrate sensations into perceptions. According to him, we cannot experience anything at all until *after* sensations have been artificially ordered in space and time by these faculties. The "forms of sensibility" thus forcibly *give form* to the sensible; and such ordering is therefore purely intuitive (in the Kantian sense of that term) and not empirical, a priori and not a posteriori.

The implication of such a viewpoint is that our notions of space and time are given and fixed, for everyone and forever. *Yet the documented history of human thought on space and time is that our notions of them are uncertain, varied and changing.* Still today, there are doubts and differences of opinion in these matters, and we continue to hope our understanding of them will further evolve.

This historical fact is sufficient proof that Kant's theory that space and time are not empirical percepts or concepts, but forms somehow imposed by our faculty of sensibility, is wrong. For, to repeat, if Kant's view were correct, there would be no change across human history in our

ideas concerning space and time. We would collectively have a definite, common and static view of them. Our faculties could not adapt to changing data and yield new theories about space and time.

The truth is, our ideas in this field have evolved greatly through history, and also change as we individually grow and become more educated.

The Greek geometers and philosophers developed certain views of space and time. Zeno found certain difficulties in them. In modern times, Descartes invented coordinate geometry. Newton and Leibniz developed their differential and integral calculus. Kant's deterministic-subjectivist view was itself one stage in the historical development of these notions. Many other philosophers have since had their say on the topics of space and time, notably Husserl.[128]

Among recent physicists, Einstein proposed revolutionary ideas, which tied time to space and adopted non-Euclidean geometry for them. Gödel showed that theory left some unanswered questions[129]. Hawking and others have lately greatly affected our views, with reference to black holes and the Big Bang. And of course, string theory with its additional dimensions no doubt further complicates matters.

All that goes to show that space and time are *inductively developed* percepts and concepts. Note well that not only the concepts, but even their perceptual basis varies over time: for instance, the discovery of the constancy of the measured velocity of light (through the Michelson-Morley experiments) greatly (thanks to Einstein theory of Relativity) changed our view of space and time. If these percepts and concepts were constitutional or structural as Kant implies, they would be static and independent of all experience.

This simple historical observation demonstrates incontrovertibly the inaccuracy of Kant's mechanistic view of our knowledge of space and time. Kant's view is rightly labeled "Idealism" (though not in the sense of Plato's transcendentally existing Forms or Ideas), because it effectively divorces our percepts and concepts of space and time from experience. His theory implies that they are inventions of our faculties, i.e. ultimately equivalent to figments of the imagination, with no real relevance to or dependence on empirical data.

In my view, space and time are *partly percepts* directly given in experience, *and partly concepts* drawn by us from experience using logic (notably, the laws of thought). With regard to space: its first two dimensions are empirical facts evident through perception, while its third dimension requires additional logical work to be projected and so is more conceptual. As regards time: we do not perceive any such thing; it is entirely conceptual, though based on the perception of change. We experience phenomena in flux, and postulate time to make such change more reasonable.

More precisely put, regarding space, every *visual* experience involves spatial extension, at least in the sense of having two dimensions (though the latter characterization of space, in terms of dimensions, is a later and more conceptual development). What we call the third dimension (again, later, at a still more conceptual level) is the outcome of a rational attempt by

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[128] We should also keep in mind that there have been reflections on these topics in the East. See for instance, 13th century Japanese Zen master Dogen's essay "The Time Being" (pp. 69-76). Kapleau, who includes part of this essay in his book, considers its insights, "realized … introspectively … through zazen" to "parallel … to a remarkable degree" modern scientific beliefs (pp. 307-11). I don't know about that, finding it difficult to understand fully. But it any case it is interesting and challenging.

[129] See Yourgrau's instructive and interesting book on this topic.

us to make sense of certain apparent contradictions in the first two dimensions. For examples, that one thing seems to (over time) move behind or in front of another, or the effects of perspective (proximity and angle from the observer). To resolve such difficulties at the perceptual level, or interpret what we see, we introduce the third dimension, in the way of a successful inductive hypothesis.[130]

The location of auditory phenomena in space is a separate issue. The auditory phenomena are of course perceived, but their placement in space is always an inductive hypothesis, sometimes right and sometimes wrong. Similarly, the precise location of our touch sensations in our body and taste sensations in our mouth depend on an *imaginary* mapping of space, *after* physical space has already been visually perceived and understood. Thus, the phenomenon of space is primarily visual and only secondarily involves the other phenomenal modalities.

Furthermore, there seems to be *two* extensions of space, one mental and one physical. These may overlap transparently, in the sense that we seem capable of projecting some mental phenomena (hallucinations) into outer space side by side with physical phenomena. Moreover, it seems evident that mental phenomena cannot exist if we have not first come into perceptual contact with physical phenomena; that is, mental phenomena rely on memories of physical ones, which by the power of imagination we manipulate (in a second stage), as we will. Thus, mental extension is in a sense *a product of* physical extension. Nevertheless, the two spaces exist, and it would be an error to speak of the one and ignore the other.

If we consider *measurement* of extensions (comparing shapes, lengths of lines, areas of surfaces, volumes of bodies), it is possible in both spaces. Such measurement is based on using some concrete thing (like a physical or imaginary ruler) as an intermediary scale, to compare one length to all others. However, mental measurement of internal or external space (the latter by a sort of hallucination) is necessarily approximate (though some people are better at such estimates than others). Physical measurement is considerably more accurate, and we have found many ways to perform it.

The mathematical science of geometry is an attempt to explain and anticipate various apparent regularities in spatial existence. But this science has a great inherent difficulty, in that its basic units of consideration, viz. points, lines and surfaces, are not empirically given, whether in mental or physical space, but require *purely verbal negative suppositions* to be adequately defined. We cannot actually see a point without any extension, or a line or surface devoid of further thickness[131]. We have to specify by means of verbal negation what we intend concerning them. So the points, lines and surfaces dealt with by geometrical theory are clearly and definitely concepts; they idealize percepts, but are not percepts. They are, at best, abstractions from approximate concretes; they not purely empirical objects.

All the above factors regarding space are mentioned here so as to remind us that what we call "space" has many aspects and involves many considerations. There is space in the purely

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[130] Note that we could conceivably adopt an alternative, more positivistic hypothesis, and regard things as really disappearing when they go behind others and regard things as really changing size and shape as they change distance and direction relative to us (or we do relative to them). This possible interpretation of perspectives is not favored because it is much more difficult for the individual to manage in practice, and more importantly because of the *irreconcilable contradictions* it implies between the experiences of different individuals.

[131] We only perceive rough approximations of those geometrical units: e.g. extended dots rather than points, and so forth. See my discussion of this in my *Phenomenology* chapters 8.2 and 8.3.

perceptual sense, as it appears in any and all visual experiences. Visual experience without extension is inconceivable, contrary to Kant's suggestion. We could not see only a dimensionless point; and in uniform light (or even total darkness) we would still see an extended space (or void). Therefore extension (in two dimensions, to repeat) is given in experience and does not need to be as Kant suggested imposed on experience.

Moreover, there is a subsequent development of *the concept* of space, first with regard to a third dimension, second in correlation with other phenomenal modalities (sound, touch, taste), and onward using more abstract considerations. By the latter I mean: giving space a name, developing a theory of space, the notion of dimensions, evolving a geometry of space, first Euclidean and then non-Euclidean, and so forth. At an advanced stage, we realize the relativity of spatial and temporal measurements, and develop a theory of relativity, then a theory linking space and time. And the conceptualization of space goes on and on, for there are still many unsolved mysteries.

Similarly, the word time refers to many levels of consideration, from the pure perception of motion in space and qualitative changes (visual or otherwise) – to very abstract concepts and complex theories. Time is not itself perceived but largely conceived with reference to experiences of motion and mutation. Time is a concept, and not at all a percept (unlike the first two dimensions of space). Indeed, the most perceptual part of change is that which is evident *now* (in the present); change occurring in the past and more so in the future requires still more conceptual means to grasp (notably reliance on memory and on imagination). Propositions have to be formulated and justified.

What is given to us in experience is motion and change; but since these seem to us to imply contradictions, we invent the concept of time to resolve the contradictions somewhat. We say: though this thing or moment differs from its predecessor or successor in my experience, there is no contradiction because they are in different positions in a "time" dimension. We thus invent time, somewhat in analogy to space, although such analogy has its difficulties, since it presents time as static rather than dynamic and fails to clearly distinguish between present, past and future.

We notice, too, that there are apparently an inner time and an outer one. That is to say, mental events call for a harmonizing concept of time just as physical events do[132]; and since these two sets of events seem to occur in separate domains, we can effectively speak of two time streams. Or eventually, perhaps, one time stream to explain both sets of events. Here again, the issue of measurement arises, using a physical clock or mental metronome (i.e. using certain standard motions or changes for comparison with others).

And here again, the concept becomes more and more abstract and complicated, as we seek to better understand it and build theories around it, and relate it to other things (like space, in the theory of relativity). Certainly, the concept of time is full of difficulties, which I need not go into here, for they are widely known. E.g. How stretched in time is the present? Where have past instances of the present gone, and where will future instances of the present come from? We hope over time we will overcome more of these epistemological and ontological

[132] Note this well – it is not merely physical time that presents us with difficulties, but equally mental time. So, it cannot be argued that the difficulties are specifically physical, or specifically mental either.

difficulties and others we do not yet notice. Yet the concept of time is very useful, so we continue to use it anyway.[133]

What here should be stressed is that our concepts of space and time are built up inductively from various percepts. Inductively means using generalization and particularization, adductive logic (confirmation, rejection of theories). These concepts do not, as Kant implies, antedate and themselves form the percepts in some way. We should not confuse the formation of concepts out of percepts, with the Kantian idea that the percepts are formed out of sensations. For it is such confusion that gives Kant's theory a verisimilitude it does not deserve.

For instance, Kant's theory of space seems justified by our common belief that our eyes subdivide the light coming from a physical object, producing visual sensations that are reassembled in the brain to give us a complete image, which is what we allegedly see. But this scenario leads to logical difficulties, as discussed elsewhere. We must therefore on the contrary assume that we perceive the physical object itself, or at least the physical light from it, and not a mental image of it stored in the brain. In that case, the internal consistency of Kant's theory is too shaky and the theory must fall.

Furthermore, we should not be overly impressed by the fact that Kant's ideas on space and time inspired new thinking in subsequent philosophy and science. Most famously, Einstein acknowledged some debt to Kant in this domain. A not-entirely-accurate viewpoint (like Kant's novel subjectivism of space and time) can still lead to correct views (like Einstein's more objectivist relativity of observations to observers). Fanciful notions can give rise to good ideas.

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[133] See also my discussions of issues relating to space and time in *Phenomenology* chapters 2.4 and 6.1-6.3.

5. Kant's "categories"

Kant proposed a list of twelve "categories" as corresponding to the "forms of the understanding" that he considered the foundations of our conceptual knowledge. Aristotle had long before proposed a list of ten "categories" that remained essentially unchallenged till Kant. Kant did not modify Aristotle's list, but replaced it with another.

Aristotle's categories were concepts averred to be the highest possible in a classification of all things, i.e. the *summa genera* of existence. Actually, he conceived them and presented them as all the kinds of things that would be subjects or predicates of propositions (by which he here meant categorical propositions of the simplest predicative form 'X is Y'). It was a natural continuation of Aristotle's formal logic to ask what contents one might expect in the propositions under study. Although this research project was essentially justifiable and interesting, Aristotle made many methodological mistakes in its pursuit.

Aristotle's list of categories included: substance, quantity, quality, relation, place, time, action, passion, position, and state. Aristotle developed this list empirically, i.e. by considering numerous propositions, and noting what the subject and predicate were about. It was not a systematic division and arrangement proceeding from some theoretical considerations, but a random collection of disparate items based on observation.

Briefly put, substance refers to subjects like Socrates (a particular, or primary substance) or Man (a universal, or secondary substance). The other categories refer to possible predicates. These may be quantitative (e.g. is big), qualitative (e.g. is red), or relational (e.g. is louder than so and so), they may indicate place or time (e.g. yesterday, at the market), they may describe some action of the subject (e.g. he hammers the nail in), or resulting position of it/his (e.g. he is tired out), or some passion of the subject (e.g. the page was blown away by the wind), or resulting state of it/his (e.g. it is lost).

Note that a particular cannot be a predicate of a universal subject, but a universal can be a predicate of a particular subject (e.g. Man can be predicated of Socrates) – so substance is also a predicable. Also note that other categories can be subjects if we intend them as substances, 'as such' (e.g. big size, redness, hammering, etc.).

Now, some of these categories seem *artificial* to me, i.e. I am not sure they can be cast in the role of predicates without forcing them. Take, for instance, the category of "relation". In truth, every proposition is relational. The copula 'is' in the proposition 'X is Y' is, note well, a specific relation between the terms X and Y[134].

[134] The failure to understand this simple fact has led to much confusion in modern logic. Thus, Frege's arbitrary analysis of 'X is Y' into two components: [X] and [is Y] – instead of into three

A proposition like 'X is bigger than Y' might be called more specifically *comparative*, with regard to size (in this case). I would not regard 'bigger than Y' as a predicate. We can formally permute such a proposition, i.e. fit it into the basic 'X is Y' format, by saying 'X is [something bigger than Y]'. But note that in such event the new predicate is not 'bigger than Y' but '*something* bigger than Y' – and this new predicate *is not a "relation"* but a "substance"!

It is more accurate to view 'is bigger than' as *the relational aspect of* the proposition (i.e. as the 'copula', in an expanded sense not limited to 'is'), and X and Y as its terms (which are called subject and object in such relational contexts). Moreover, such a comparative copula can concern some of the other categories (in the sense that 'bigger' concerns quantity, 'redder' concerns quality, 'further' concerns place, 'later' concerns time, etc.).

Again, take "place" and "time". They are not directly predicated, but are *terms* (the objects, Y) of distinct *relational* propositions: 'X is *in* this place and is *at* that time'. In such cases, the copula (relation) involved is not really 'is', but 'is in' or 'is at'. As regards to time, it can be tied to the copula in the way of its *tense*, as in 'X was, is or will be Y', indicating past, present or future predication. In the case of prediction, i.e. future predication, complications are involved – regarding whether the projected event is inevitable, or dependent on both human volition and natural events, or dependent on human volition alone.

Now, consider "action" and "passion". We are somewhat justified in distinguishing them, because this allows us to convert the one to the other; for example, 'X sings Y' to 'Y is sung by X', or vice versa. Apart from that, their formal properties are usually little different, but great care must be exercised in syllogistic reasoning to make sure the putative middle term is indeed one and the same in both premises. Additionally, each such copula has its own rules of inference; for instance, causative propositions ('X causes Y', 'Y is caused by X', and the like) constitute by themselves a whole field of logic, and cannot be treated as mere cases of action or passion.

On the other hand, it is hard to see why "position" and "state", which are presented as the end-results of some "action" or "passion" respectively, are distinguished from each other and from other categories like quantity or quality. Their formal properties are surely the same, and the only way we manage to distinguish them is with reference to *another* proposition – one stating: "this predicate emerged after that action or passion". So, in truth, position and state have no intrinsic justification as distinct categories, but are at best subcategories of other categories.

At a deeper level, the distinction between "action" and "passion" (and their end-results) is not truly as widely applicable as it may seem at first glance. If we consider aetiological issues, they are seen to refer specifically to volitional contexts, i.e. to action in the sense of change through one's will and to passion in the sense of change against one's will. For examples, crushing is action and being crushed is passion. In this more limited sense, even a static event involving restraint of willpower, such as a man just sitting (rather than doing anything else), is an action.

In this perspective, all so-called actions of things devoid of the power of will, i.e. functioning exclusively under determinism, or even spontaneity, such as stones or machines, or subatomic

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components: [X], [is] and [Y] – led to the Russell Paradox (see my *Future Logic*, chapter 45). We see here that Aristotle's inadequate theory of the categories was partly responsible for this confusion.

particles – are really passions in a large sense. This means that the terms action and passion as initially apparently used are confused and equivocal.

Thus, Aristotle's proposed categories are not all on the same level of abstraction, and many of them fudge many meanings. Some are not clearly mutually exclusive though they should be, and some ought to include others but do not do so. There are many ambiguities and unanswered questions in this list. Moreover, how can we be sure the proposed list is *comprehensive* – why not leave the list open-ended, allowing for new discoveries and insights?

Most important, Aristotle's listing is flawed from its very conception, because it effectively presupposes that all propositions (or more precisely, all categorical propositions, and by extension the categorical-looking antecedents and consequents of hypothetical propositions) are 'predicative' (i.e. truly 'X is Y') in form. But, though all (or maybe just most) propositions can be recast in the form of predications by judicious permutations (as in the example above given), it does not follow that their full meaning is conserved in such a logical operation.

The non-predicative forms are not to be dispensed with or glossed over by logicians; they are interesting and important in their own right. Permutation is an artifice, which we find convenient in some situations, but it must not be overestimated. Because of the silly presupposition that "is" is the only ultimately significant copula, Aristotle prevented future logicians from seriously studying categorical propositions other than the standard classificatory form.

Moreover, Aristotle naturally pursued this idea by trying to force all *terms* into the corresponding subject-predicate format in his doctrine of the categories. To do so, he had to artificially merge part of the copula with the object in many cases. To top it all, he overconfidently declared the search for categories closed at the round number of ten. Even if his categories were individually worth formulating, he had no right to assume them together exhaustive and thus to arbitrarily arrest further research.

It is only in modern times that this Aristotelian scheme began to be challenged. Kant was the first (or one of the first) to challenge it, though what he offered in exchange was not entirely satisfactory either.

The important things to note here are the following: Aristotle's search for the top genera, a list of concepts that include all other concepts, is not *per se* illegitimate; nor is his empirical method of pursuing this goal to be fundamentally criticized. His methodological sins here were rather: that he wrongly assumed all propositions were fully reducible to the 'X is Y' form, and that he artificially stopped his empirical search at ten categories. These two mistakes caused him to try and force all things to fit into his scheme, turning it from a scientific endeavor to a dogma.

The lesson to learn is the following: we ought indeed to be attentive to all levels of conceptualization, and we should do this in an open-minded way rather than by applying some rational prejudice. Logicians must seek out *every existing form of proposition*, rather than assume there is one significant form only and search for all its possible subjects and predicates (as Aristotle did). We should investigate the logic of each and every form (including the variety of contents it may house). We should at no time assume our list of forms is complete, but remain open to new discoveries and inventions.

Kant rightly abandoned Aristotle's list, in view of the haphazard way it was accumulated and its lack of a "guiding principle" (other than its declared mission to exhaust all contents of predication). Actually, as we shall see, Kant's proposed list, though in many respects an improvement on Aristotle's, suffered from similar imperfections in other respects. It was less haphazard, but also less empirical. It was more systematically conceived, but also forced things into a preconceived arbitrary scheme.

The following is **Kant's list** of twelve "categories", made up of four groups (called "moments") of three categories each[135], with some explanatory and critical comments by me:

- **Quality = reality, negation, limitation**. I would refer to this group as Polarity, and to its first two members as respectively presence and absence (of some specified thing, entity, character or event); these are contradictories, of course. To use the word "reality" here would not be accurate, since we are in fact on a phenomenological level of consideration. Regarding limitation, this could be defined as "X is present till Y and absent beyond Y" (where X is some thing and Y is some point in space and time). Thus, limitation is effectively a compound of presence and absence; and it involves a notion of space and/or time, subdividing a whole into parts. The categories of Quality play a role in those of inherence and subsistence.
- **Quantity = unity, plurality, totality**. Quantity, here, means Number (or Scope). Unity refers to *this* one, i.e. some indicated single (thing); plurality refers to an *unspecified* number of units, i.e. many, more than one (thing); and totality to *all* (things of a certain group). Note that totality (all) may be taken as a special case of plurality (some unspecified number), or as contrary to plurality (if the latter is read as '*only* some'). Totality also presupposes that we have already delimited some group of things. Thus, the categories of Quantity ought to be related to the category of community, if we understand the latter as referring to classification (see below).
- **Modality = existence, possibility, necessity**. Modality is aptly named, but existence here should more accurately be called actuality; it means this indicated fact, here and now or there and then (a precise space and time position is specified). Possibility may mean some conditions or *only* some conditions; the latter is called contingency, the former includes necessity as an alternative to contingency. Necessity refers to something that occurs under all conditions. Comparing modality to quantity, we see that the three modalities are special cases of the three quantities, applicable specifically to numbers *of conditions*. Modality is also closely related with Causation.
- **Relation = inherence and subsistence, causality and dependence, community**. I suppose that Kant had in mind here categorical, conditional and disjunctive propositions; thus, by Relation he meant the Copula of categorical propositions, or more broadly the Forms of conditional (if-then-) or disjunctive (either-or-) ones. Note that his three categories are defined through five subcategories, here, breaking the desired symmetry somewhat. The first pair of relations is based on the formal notions of subject and predicate; it is thus usually interpreted as referring to 'substance and accident', i.e. to *entities and their properties*. The second pair is interpreted as 'cause and effect'; but note that though *causation* (the kind of causality here apparently

[135] Actually, two of the three categories in the last group are not named, but subdivided into two subcategories each.

> intended) is a compound of conditional propositions, it does not follow that these forms are equivalent; moreover, volition and natural spontaneity do not seem to have been given a place in this scheme. With regard to the last category, 'community', more will be said further on.

Various additional comments are in order.

a. In sum, Kant here seems to have tried to list the ontological assumptions or implications apparently underlying the various already known logical features of propositions (or "judgments", in his terminology). That is to say, starting from our known forms of discourse, he infers a corresponding list of what they seem to intend, presume or imply *out there in the apparent object*. He consciously interprets logical features, to bring out their ontological significances.

It is therefore surprising that he goes on, after drawing up this list, to overturn its ontological moment, changing it into a sort of mental reformatting of data inputs. The transition seems arbitrary, without intrinsic logic. I refer here to Kant's interpretation these twelve categories as the "forms of the understanding", i.e. as "pure (a priori, non-empirical) concepts" on which our knowledge is based. This requires explanation.

Kant characterized (with typical grandiosity) the above-mentioned transition from features of propositions to facts of reality as "**metaphysical deduction**". It is important to dwell on this phrase, because it tells us a lot about his thinking. Kant here takes the various logical distinctions developed by Aristotle as his givens, and "*deduces*" from them corresponding facts of reality (referred to by the adjective "metaphysical").[136]

This is, of course, topsy-turvy. Kant can maybe do that, because he has Aristotle's work behind him. But Aristotle had to go the other way, and derive the logic from the reality; he had no doctrinal givens. That is, in truth, no deduction is involved in relating formal logic to reality, but an *induction*. And I would suggest that even Kant and ourselves, coming after Aristotle, need induction to understand all this; we cannot do so by mere deductive means.

Thus, Kant was essentially thinking in the way of a passive, conventional-minded student, whereas Aristotle had to proceed in the way of a creative, original researcher. So it is not surprising that Kant conceived a reverse epistemology, in which the effect becomes the cause and vice versa. That is, it was to be expected that Kant would present the logical categories as determining the metaphysical categories, rather than the reverse. He was just describing his own rather deductive thought process; but this was not a universally applicable description, since it ignored the more inductive thought processes Aristotle had used before him.[137]

b. We should of course also note that, though Kant's list is *prima facie* more intellectually interesting and satisfying than Aristotle's, it is **not a list of the same things**. Albeit some similarities in terminology (viz. the use of the words "categories", "quality", "quantity",

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[136] This is comparable to Descartes' *cogito ergo sum* (deducing of "I am" from "I think"), or to the St. Anselm's ontological argument (deducing the existence of God from the very idea of Him). Kant no doubt had these examples in mind when he concocted this deduction from the logical to the ontological.

[137] Kant's theory of the categories involves further complications, such as the "transcendental deduction", the "schemata", and other intricate notions and arguments designed to justify his Copernican revolution. But I will not examine such details further here, other than to say these were attempts at rationalization of unreasonable proposals rather than credible justifications.

"relation", "substance"), this list obviously essentially refers to something essentially different. Aristotle's list could be said (forcing it a little) to have concerned, in Kantian terms, only the subdivisions called inherence (subjects) and subsistence (predicates).

Aristotle's list was meant to clarify the possible *contents of propositions*, i.e. the kinds of things we may and do *think about*. Kant's list, on the other hand, was intended as a collection of the possible *logical properties of propositions*, i.e. the various *formal features of our thoughts*.[138] These various factors were not unknown to Aristotle – in fact, it was he who originally discovered and discussed most of them. Thus, Kant was not discovering new ideas, but merely drawing attention in a new way to certain already existing ideas.

So, whereas Aristotle had assembled a list of categories *of content*, Kant proposed a list of categories *of form*[139]. Kant (wisely, I think) considered the latter list more worthy of philosophical study; his doctrine was novel only in the emphasis he gave to already known formal characteristics.

We could also say that whereas Aristotle sought to identify *what* we think about, Kant sought to identify *how* we think about them. That is, while Aristotle's list may be regarded as *ontological* information, Kant's list has a more *epistemological* significance (although he misjudged precisely what that was).

Moreover, whereas Aristotle's categories are acquired possessions of ours (albeit almost inevitably acquired, by virtue of their ubiquity), Kant's are averred *forces* innate in us. While Aristotle drew up his list in the way of an empiricist observation of objective phenomena, Kant drew his up in the way of a rationalist prediction of subjective phenomena; i.e. he effectively claimed his categories to be *instincts*, which somehow control our thoughts, out of our control, and he claimed to know this about them by purely "deductive" means.

c. Note well the above-mentioned interrelations between the three categories under each heading, and those between the headings. The interrelations in each group are clearly **not symmetrical in all respects**. The trouble with system building is that it almost inevitably involves oversimplifications; the natural diversity involved is obscured and accuracy is sacrificed. Kant's attempt to force his list in a numerically symmetrical scheme is a case in point.

(i) Consider first the polarities. In Aristotle's logic, there are two mutually exclusive and exhaustive polarities, the positive and the negative. Limitation is not in his list. Kant seems to have introduced this third category for the sake of symmetry.

If we consider his proposal, it seems to refer to a quantification of the predicate. When we say X is Y, we mean that X is Y in some respect, without excluding that it might be other than Y in other respects. For example, "Roses are red" does not exclude these same roses from having green leaves or from being wet, soft, etc. One predication does not exclude others. On the other hand, when we say X is not Y, we mean that X is not at all Y in any respect. For this reason, affirmation and denial are mutually exclusive and exhaustive.

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138 I say "the" various contents or features, here, because both Aristotle and Kant considered their lists complete; but I do not wish to imply that I agree with them (i.e. I would prefer to drop the word "the").

139 Some (namely, Lesniewski and Carnap) have already noted this difference, calling Aristotle's categories semantic and Kant's categories syntactic.

To insert limitation here suggests that a third possibility exists, viz. X is partly Y and partly not Y. This possibility does indeed exist, but it is already tacitly covered by the proposition X is Y, as just explained. To insert limitation seems to imply that X is Y means X is wholly Y – which is never true of anything, except perhaps X is X (provided "is" is here understood as "equals"). Moreover, if we insert limitation, logic requires we insert its opposite, infinity; and if we do that, we must consider infinity both on the positive side and on the negative side. But clearly, all this no longer has anything to do with the polarities of ordinary predication. It is just an attempted analogy gone berserk.

If we were to insist on having a triad, I would suggest as our third category that of *problemacy*, which could be characterized as limitation of certainty. This would allow us to refer to problematic propositions, those involving an uncertainty as to whether X is Y or not Y, or a probability rating favoring the one over the other. When presence and absence is predicated without qualification, certainty is tacitly implied; this is appropriate to a deductive system of logic. But when we consider inductive issues, we need the in-between concept of problemacy (implying intermediate degrees between truth or falsehood, or knowledge of them), as against settled (known) truth or falsehood. Without such a tool, our discourse would be stuck.

However, it might be asked whether this is the appropriate place to mention certainty and problemacy. They are, after all, logical or epistemic (*de dicta*) modalities; so, they should be included under the heading of modality. In that case, the heading of polarity should only have two categories. On the other hand, if we look upon the heading of modality as essentially concerned with the *de re* modes of modality (the spatial, temporal, natural, and extensional modes), then it would be reasonable to place problemacy here. In either event, Kant's category of limitation should be abandoned. It has more to do with quantity (scope of application) than with quality (i.e. polarity).

(ii) Consider now the quantities and modalities. They are very analogous sets – not fortuitously, but because quantity is a mode of modality! Quantity refers to extensional modality. Alternatively, quantity is used to define the other modes of modalities. Therefore, the heading of modality in Kant's list should be taken to refer to the natural mode of modality, and eventually the spatial and temporal ones, too; that is, to the remaining *de re* modes. However, it is clear from Kant's references in this context to assertoric, problematic and apodictic propositions that he rather has in mind *de dicta* modality.

In adopting this position, Kant is somewhat influenced by Aristotle, who in his work on modal logic generally refers to *de dicta* modalities. However, in his work on ontology, Aristotle examines *de re* modalities in great detail. Kant does not apparently take these important modes of modality into consideration here. If this is indeed Kant's intention, then he is clearly in error here. This error of his would explain why Kant essentially followed Hume's denial of natural necessity. When Kant speaks of necessary vs. contingent propositions in the context of the analytic-synthetic dichotomy, he is apparently referring to *de dicta* modalities. At least, mainly so; but perhaps, not exclusively so. It seems that he did not have a distinctive notion of the *de re* modalities.

Another critique of Kant's list of the quantities and modalities is its one-sidedness. Unity, plurality and totality are the positive side of judgments: this one, some (indefinite) plurality of, and all X are Y. But there are the corresponding judgments this X is not Y, some X are not Y,

and No X is Y to consider. Similarly, Actuality, possibility and necessity are the positive modalities. But there are parallel negative ones, namely: actuality, possibility and necessity of negation. It is, admittedly, legitimate to consider the negative cases as special applications of the positive ones, since the polarity is attached to the copula rather than to the quantity or modality.

However, it is also true that some people (notably, Hume) do not realize the logical connection between impossibility and necessity, and seek to appeal to the former while denying the latter. Moreover, we need to mention that possibility (the negation of impossibility) and possibility-not (the negation of necessity) can be conjoined, yielding the modal category of contingency. Similarly with regard to quantity. It is therefore justified to consider Kant's lists of quantities and modalities as consisting of three pairs of categories each. This destroys the symmetry somewhat, but after all his heading of relations comprises three sets of two categories, so this is no big deal.

One more comment regarding symmetry – it could be argued that the positive and negative polarities ("qualities") are included in the quantitative category of unity and the modal category of actuality. In other words, the set of categories called polarity could be viewed as redundant; or alternatively, the negative quantity and modality categories could be viewed as applications of the polarities to the quantities and modalities. In either case, the symmetry Kant sought is again broken. All this is said to point out the artificiality of his list.

(iii) With regard to the heading of relations, now. It is not at all obvious that this list is complete. Kant is influenced by Aristotle in thinking that the predicative form "X is Y" suffices to express all categorical relations. Aristotle built his list of categories by glossing over important formal differences (because his main goal was to develop his syllogistic theory), and Kant follows his lead in assuming a very limited bestiary.

For instance, just where in Kant's list should *positioning in space and time* be classified? Aristotle treats place and time as predicates; so perhaps Kant thinks so too (although "is in" and "is at" are rather, in my view, relational copulas). Again, where is the process of *comparison* mentioned in Kant? Nowhere, yet comparative propositions like "X is more Z than Y" are crucial to distinguishing and classifying[140]. Another set of categorical propositions crucial to human knowledge is that dealing with *change* of various kinds. I mean forms like "X gets to be Y" (alteration), "X becomes Y" (radical change), and "X evolves to Y" (evolution). Such propositions are not reducible to predicative ones, or at least not directly. Again, Kant does not classify volition and natural spontaneity in this context[141].

Clearly, categorical propositions are in fact a broad class (or genus) of many different kinds of propositions. The predicative form "X is Y" is just one species of categorical proposition. In fact, there are many more, and we would be hard put to list them all. Kant follows Aristotle in treating the class as ultimately homogeneous; but we cannot really reduce all other categorical forms to this simplest of categorical forms without important losses of meaning.

Kant makes the same mistake with regard to hypothetical propositions. He does not realize that each of the *de dicta* and *de re* modes of modality has its own set of hypothetical forms. He

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[140] Note that "more", "less" and "as much" are essentially both relational and quantitative, and they are not part of the predicate.

[141] As I have already mentioned, the relation of 'causality' here seems to more specifically intend causation, in view of its implicit reference to conditional propositions.

thinks of hypotheticals as solely if–then (logical) propositions, but some are distinctively different in intent: "in cases that–then" (extensional), "when–then" (natural), "at times when–then" (temporal) or "in places where–there" (spatial). These different modes cannot be reduced to each other, but must be treated separately if we are to truly reflect human thought. To each corresponds a mode or type of causation.

Moreover, Kant's apparent ontological interpretation of disjunction as "community" seems forced to me. Some commentators explain this as "reciprocity of agent and patient", but I fail to see what that has to do with disjunctive judgment. I would rather see in it the logical ground for *classification* (in the sense that a class is a disjunctive collection of members). Alternatively, disjunction is much used in *inductive* thinking, to list alternative theories or directions. Kant interpreted disjunction the way he did, simply because he could think of no other interpretation.

d. As we have shown, Kant's errors of enumeration were mostly based on Aristotle's errors of classification. Also, by insisting on a fixed number of twelve categories, Kant was making the same mistake Aristotle had made when insisting on precisely ten categories. He exacerbated this artificial difficulty by his scheme of four groups of three. He painted himself into a corner, making difficult any further development of his list, by himself as well as others. It would have been wiser for him to declare this heading forever open, allowing mankind to invent or discover new relations.

For if we consider what Kant was trying to do in drawing up this list of categories, it is clear that he missed out on a *fifth* heading, namely: **Logical processes**, comprised of **Deductive arguments**, **Inductive arguments**, and (if we insist on a third category for the sake of symmetry[142]) **Fallacies**, i.e. arbitrary or irrational arguments.

Granting that Kant's list of categories was an attempt, however gauche, to summarize the most basic tools of logic, his list is clearly too short. He has given attention to various *static features* of judgment (polarities, quantities and modalities), but has simply ignored the all-important *dynamics* of judgment, through which we rightly or wrongly justify our beliefs or infer new beliefs from them. I refer here to processes like syllogism, generalization, and the fallacy of accident, to give some obvious examples.

Thus, Kant ought to have listed *fifteen* rather than twelve categories. Note however that deduction and induction are not exactly mutually exclusive, though both refer to valid argument as against the invalid logical processes labeled fallacious. Induction may be viewed as the essence of the human method of knowledge; and in that case, deduction should be viewed as one of the tools in the wide array of inductive processes. Alternatively, deduction could be viewed as the essence of logic; and in that case, what distinguishes induction from it is that inductive reasoning yields two or more alternative conclusions, whereas deductive reasoning yields only one conclusion. Thus, these categories are closely related to each other.

It should be added that when I say that induction and deduction are all the means of knowledge available to mankind, I do not mean to exclude at the outset more mystical ways of

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142 I think it is wise to include fallacies as the third category under this heading, because people do not only reason correctly, in the way of induction and deduction, but also very commonly incorrectly. Such erroneous logical processes, or paralogisms, are sometimes intentional perversions of thought, to be sure; but very often they are expressions of ignorance of logic. Under the heading of fallacies I would include any failure to apply any of the laws of inductive or deductive logic.

knowledge, such as prophecy or meditative enlightenment. I do not, either, mean to include them, but only to keep an open mind. The point made here is that since induction includes all possible experiences, as well as use of logic, then if one has such mystical experiences, they would be accepted as new, additional data to be taken into consideration, and to be assimilated as well as one can by logic. There is no conflict in principle between the empirical-rational method and out of the ordinary experiences.

Note also that induction and deduction are *the very means* through which we validate induction and deduction and invalidate fallacious arguments. There is no circularity in saying so, if we keep in mind that these two methodologies are based on both the laws of thought and experience.

The science of logic as a whole, which attempts to list and justify all the arguments in these two branches, is not validated by an axiomatic system of any sort (the *more geometrico*) but built up from successive experiences and logical insights (i.e. particular instances of the laws of thought). To seek to call upon some other justifications than those is to fail to ask where those in turn would come from, ad infinitum. And one cannot reject logic because of that implied infinity, because this would mean one regards that rejection of infinity as a supreme principle not itself needing justification – which is self-contradictory. Thus, logic is solidly grounded and in no fear of reproof.

6. Ratiocinations

Formal logic (including both its deductive or inductive branches) analyzes and validates all sorts of components and processes of human knowledge (or knowing). Looking at the totality of it, one may get the impression of a static collection of ways and means. But this is only, of course, the finished product, and we cannot claim to really understand logic till we have captured ***the many unit rational acts underlying every thought***.

This refers to the smallest building blocks of dynamic thought, which we may call ratiocinations. In formal logic, we usually think of terms, propositions and arguments as units of thought. But in fact such units are far from primary; they are mostly complex constructs, which we may call cogitations, made by various simultaneous and successive ratiocinations.

Ratiocinations and cogitations are of course all judgmental (to use Kant's term), insofar as their truth is open to doubt or discussion to various degrees (which does not mean that they are necessarily or even usually false), in contrast to pure experience which must be taken as given (i.e. true in principle).

I suspect and suggest that when Kant formulated his theory of "pure forms", the forms of sensibility and forms of understanding, he was trying to identify the rational acts that underlie what on the surface appears to most of us as thought. His distinction between "transcendental logic… which gives an account of the origins of our knowledge as well as its relationship to objects", and "general logic… which abstracts from the conditions under which our knowledge is acquired, and from any relation that knowledge has to objects", seems to point in that direction[143].

This programme of Kant's was very interesting and laudable, although he erred in focusing directly on relatively complex concepts like space and time (which he classed as intuitions) and substance and causation (which he classed as simpler concepts), instead of on the more primitive rational acts which give rise to those concepts. The latter are admittedly close to basic; but since they can (as we shall presently make clear) be reduced to sets of the former, they are not as basic as Kant implied them to be.

We wish, nevertheless, to implement Kant's good idea in its essence, and look for the true elements or irreducible primaries of reason. What are these 'ratiocinations'? They are, first and foremost, acts of reason or rational acts, from which (in various combinations, in various circumstances) all others are gradually built up. To say that they are *acts* is to mean that they

[143] Here quoting from the aforementioned Wikipedia article, without my necessarily agreeing fully with this terminology or these definitions.

are *acts of will*, volitional acts, voluntary efforts *of the subject* of rational cognition, i.e. the soul, the one who thinks.

Note well, I am not referring like Kant does to some mechanisms or structural determinants that in some mysterious and uncontrollable manner form thought out of sensory impressions (first percepts ordered in space and time, then concepts ordered by the categories); and thus present us, take it or leave it, with a finished product of doubtful logical validity or certainty. Kant's theory of knowledge makes ignorant, stupid and passive marionettes out of us, with no say over our noetic destiny. It is, as already mentioned, a self-contradictory position.

What I am saying is that the subject (i.e. you or me) is *an active agent* in the process of reasoning. It is no accident that reason and volition occur in the same biological entities – they naturally go together; they are mutually dependent faculties. They occur in individual humans in proportion to each other, because they are essential to each other's functioning[144].

The elements of reason are not cognitive "atoms"; they are not notions, ideas, concepts, and much less propositions or arguments. They are not entities, but the means through which we produce such entities; they are *cognitive events*. And they do not just occur without our participation: they are *thought by us* – they are actions *we* are called on to take to advance in our knowledge of the world by way of reason.

'Conception' refers to the act of conceiving, i.e. to the cognition of abstract relations (notably those of similarity or difference). This concept is formed by analogy and contrast to that of 'perception', which is cognition of concrete phenomena (and to 'intuition', which concerns non-phenomenal concretes). Abstracts relate concretes to each other but are not phenomenal or concrete objects themselves.

Conceptual insight (which in a broadened sense includes logical insights of compatibility or incompatibility) is something indeed mysterious (a 'seeing' without eyes and whose objects are invisible). It is the miraculous human capacity for understanding, our distinctive act of intelligence.

Before any verbalization in terms of common nouns is possible or meaningful, some sort of conception is necessary. For this reason, any attempt to deny the validity of conceptual knowledge as such is absurd. It is itself conceptual, so it cannot logically deny conception as such. Thus, conception as such (though not necessarily every conception) is necessarily valid.

Whereas Kant told us what he regarded as conditions of perceptions, I would here like to stress the conditions of conception. These include an intelligent Subject, with the power of volition, able to build concepts out of percepts. Reason is impossible without volition. Volition is needed to wonder, to ponder, to intend, to research, to check results, to logically evaluate hypotheses, to change one's opinion, and so forth. These are not functions that any machine-like entity can perform, but only someone with free will.

It is true that the effort involved in our simplest acts of reason is not always apparent. That is to say, much of our reasoning goes on subconsciously, indeed (for all intents and purposes) unconsciously. This might seem to confirm Kant's essentially mechanistic position. The brain does seemingly continuously feed our minds with thoughts of all kinds, whether we like it or

[144] Higher animals may well have some (more limited or just different) rational and volitional powers too; if they do, or to the extent that they do (for I do believe they do), these powers are likewise necessarily proportional to each other.

not. And if any effort is involved, it is rather the effort needed to stop thought – a far from easy feat. Are such thoughts "ours" in any meaningful sense? Are we just passive observers of them, or intelligent doers of them?

However, we can still profess and insist that thought is essentially volitional, by pointing out how simple, easy and quick the elementary rational acts are bound to be, and how they can become reflex and habitual and so almost invisible to us. Consciousness does not always imply self-consciousness, or consciousness of all aspects of a situation. We only become aware of our rational acts when they reach a certain level of complexity, difficulty and cumbersomeness, i.e. when an unusual, more conscious effort of thought is required of us. It is thus quite reasonable to claim that no thought is at all possible without some "presence of mind" (more precisely stated: "presence of spirit"), however minimal (or subliminal) it be[145].

This affirmation becomes all the more credible when we consider what specific acts might be listed under the heading of ratiocination. Certainly not all of Kant's pure forms, although some of them might fit the bill. Two approaches are possible to answer our question. (a) We can proactively observe the rational acts through which we gradually build up our terms, propositions and arguments, even as we do them, or (b) we can retroactively analyze the genesis of our thoughts into the simpler components to which they are reducible.

However, as we do so, it becomes obvious that we cannot dichotomize all thought into simple and complex, or ratiocination and its products. It becomes obvious that there are in fact many gradations between the simplest, irreducible rational acts and the most complex static products of these. When I first proposed a concept of ratiocination some years ago, I had in mind certain very simple rational acts; but the analytic listing below (incomplete though it be) shows that the concept must be expanded somewhat.

Some rational acts are primitive (elementary, irreducible), but others (equally important) are composed of two or more simpler rational acts. More precisely still: composite rational acts are not merely the simultaneity or succession of two primitive acts, but a combination of acts such that the second one performed depends on the results of the first one performed. It is difficult to label such an act primary, since it includes another primitive act; but on the other hand, it is difficult to label it secondary, since it adds something new to the preceding. The word ratiocination should therefore not be taken too rigidly, and range across simple to more complex rational acts.

Moreover, I do not here propose a precise and comprehensive list of ratiocinations, but only make suggestions of some possible candidates for the job, in the way of illustrations. We do not have to have a fixed list, but may engage in an ongoing research project, using open-minded trial and error as our method. The answer to our question is not some dogmatic neat doctrine, but a heuristic and flexible way. We do not want to fall into the trap set by Aristotle and Kant of a finite number of specified units, or of an artificially symmetrical scheme. We may propose candidates cautiously, tentatively and reversibly; we may proceed uncertainly and change our minds. We do not have to claim omniscience in such a delicate and crucial matter.

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145 I discuss various so-called *involuntary* acts of volition throughout my work *Volition and Allied Causal Concepts*, always postulating a minimum level of consciousness for them, since they are considered acts of volition, and all will is freewill. "Involuntary" in such contexts does not mean literally "non-volitional" but more mildly *almost* so.

The following, then, is a brief, non-exhaustive survey of how we acquire knowledge, with reference to some of the most important rational acts or ratiocinations:

- Observation of the presence of something and its consequent *affirmation*. This is clearly a simple, primary act of reason, an acknowledgment of experience in accord with the law of identity.
- Observation of the absence of something and its consequent *denial*. This act is not quite primary, because we must first think of some sought for presence and look for it (far and wide) and not find it (thus far). It is thus an inductive activity (and so open to later revision), rather than a simple act, and it refers to the second and third laws of thought as well as the first.
- Observation is essentially a passive act, although one may observe the results of more active interventions (whether directed at the object or at the subject), called *experiments*. These, whether physical or mental, are also rational acts.
- Mentally (or more precisely, spiritually) *intending* things, and physically *pointing* at them. These rational acts serve to tell ourselves (and each other, eventually[146]) what we mean to refer to during subsequent rational acts.
- *Distinguishing* and isolating one thing in the field of experience from others, or subdividing one thing into two or more things. This is done by mental projection, and involves imaginary drawing of boundaries, so that some aspects of the whole are considered as one thing while other aspects are considered as other thing(s).
- Making *comparisons and contrasts* of measure or degree. This involves observations of similarity and dissimilarity between things in the same field of experience or in different fields. Comparison is positive, and therefore more direct; contrast is negative, and therefore requires more processing.
- On the basis of the preceding activities, we *abstract* aspects of things from things, and then *group* together things that are similar and separately things that are dissimilar. Note that negation is an important aspect of abstraction.
- Abstraction is a crucial aspect of concept formation or conceptualization. Abstraction allows us to engage in *classification*, collecting distinct and similar things together; then developing hierarchies and orders of classes. Note that classification involves both integration and differentiation; including some things in a class implies excluding others from it[147].

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[146] Note that while *one's own* "pointing" is an intention that we know intuitively, *someone else's* "pointing" is ultimately understood by inductive means, i.e. by hypothesizing what might be intended and eliminating erroneous hypotheses, with reference to the enduring or repetition of such pointing in a changing context.

[147] The only classes that include everything are terms like "thing", in the sense of existent or real. Their contradictories (non-thing, etc.) are necessarily *merely verbal* fictions, i.e. essentially empty classes, in which we dump figments of our imagination that we cannot include. On this basis, we have a broader term "thing" that includes both things and non-things in the preceding sense. The value of such a broader term is that it allows us to name things that we are not yet certain about either way. That is, it has inductive value as a temporary way-station.

- After initially grouping some things together in a class, we may add on more cases, or remove some instances. These are the intentional processes of *inclusion* and *exclusion*. Such changes in subsumption are based at first on apparent similarities and differences between new and old instances.
- Eventually, efforts may be made to explicitly *define* the common and distinctive character(s) between things classed together. Sometimes definition is immediate and fixed; but usually it is gradual, tentative and adaptive. A definition may at first be vague, then become more precise.
- *Naming* a particular, or a concept that one has constructed (as above), is also a rational act. Such verbalization is not always necessary, but usually useful.
- Measurement, of course, depends on number, especially as it gets more accurate. This depends on *counting*, starting with one then two or more successively. Note that the unit is formed by distinguishing (as above detailed); some grouping may be needed; numbers greater than one depend on reiteration of addition of one.
- Also involved in measurement is the *comparison and contrast of numbers* (equal or unequal, i.e. greater or smaller). The numbers refer to entities (e.g. people or commensurable portions of a line) or to qualities (e.g. degrees of a color or speed of movement). The numbers involved may be the same, or considered approximately so; or they may different, or different enough to constitute a negation.
- Numbers also make possible *statistics*, from which we develop frequency concepts like all, some, none, few, most, through which we define the quantity and other types of modality of propositions.
- *Proposing* (i.e. formulating a proposition) categorically, then conditionally or disjunctively, are obviously complex rational acts, since they depend on many of the previously mentioned simpler acts being performed first (i.e. a proposition involves many concepts).
- Propositions are initially singular and actual, and thus by implication particular and possible. We try to *generalize* them as far as possible, and have to *particularize* them as much as necessary. These are crucial rational acts, depending on the laws of thought and the principle of induction, and on numerical concepts.
- *Asking questions and looking for answers* are rational acts, which help us advance in our conceptualizations and formulations of propositions. We make suggestions or speculations in reply, which we then must test before we can adopt or reject them.
- *Theorizing* involves not only forming concepts and propositions, but also interrelating them together and with experience by means of various arguments. Theories may consist of one proposition or large and intricate conjunctions of propositions. What most distinguishes theorizing from mere proposing, however, is the *invention of new terms*, i.e. the use of imagination.
- Frequently, we move from one abstraction to another by way of (rough or precise) *analogy*, using one conjunction of characters to construct another. This involves *imagination*, the power of reshuffling mental data at will.

- An important aspect of theorizing is the search for causes, whether in the epistemic sense of reasons (attempted explanations, premises or items of evidence), or in the more ontological senses of causatives, volitional agents or influences of various sorts. For knowledge of causes in any of these many senses is the main source of our *understanding.*
- Theories are always in flux, being constructed, modified or dismantled. If they fit in with the totality of experience and logical considerations they may be adopted; if they don't they are rejected or at least made to adapt. This is the inductive process of *adduction*, which involves complex rules of comparison and contrast between competing hypotheses.
- *Arguing*, from premises to conclusions, using inductive and deductive logical processes, like adduction or syllogism, is used to justify and clarify. Arguments are still more complex rational acts, dependent on previously formed concepts and propositions.
- Arguments, and indeed the various rational acts preceding and succeeding them, refer to *the laws of thought and the principle of induction*. This means acknowledging appearances, looking for contradictions between them, looking for solutions to problems, judging truth and falsehood, estimating probabilities.
- *Logic* may be exercised ad hoc, without using theoretical knowledge of logic, or may be applied with reference to logic theory previously developed or studied. Every insight or act of logic is of course a rational act. A movement of thought not disciplined by logic is irrational.

The above list shows many of the main rational acts involved in everyday reasoning. It is clear that the acts here listed are all deeply involved in the formation of concepts, propositions and arguments of all kinds. It is also clear that there are both inductive and deductive movements of thought in most of these various acts.

Note that some ratiocination is pre-conceptual and pre-verbal treatment of experiential data. It is distinctively aimed at perceived particulars, rather than at conceived universals. Such ratiocination prepares the ground for further thought - thought of a more conceptual variety. The latter is also composed of ratiocinations; for instance, naming is a distinct rational act, one of the many components of verbal thought.

If we analyze our rational acts closely, we find them all to be *intelligent responses to the way things appear to us*. Through them, we use given experiences to form concepts of varying complexity (for example, causation cannot be understood or known in a given case without first grasping and using affirmation, negation, classification, statistics and conditioning).

These constructs are not necessarily true in a given case, because the more complex they get the more they involve inductive assumptions (for example, assuming some negation by generalization). Nevertheless, the simplest ones are pretty reliable because of the narrow limits of their assumptions.

Some ratiocination involves direct insight, i.e. it refers to evidence given in experience alone (e.g. affirming, on the basis of observation of presence). Some, however, is more indirect, involving some reasoning (e.g. denying, on the basis of non-observation of presence). Thus,

on the whole, ratiocination appeals to *both* experience and logic, and not merely to the one or the other.

It is clear from our list that ratiocinations are necessarily volitional at some level, in conscious accord with the laws of thought. We can do them, or abstain from doing them. We can do them conscientiously and correctly; or we can fudge them, and err. We retain the capacity to think irrationally, i.e. to misuse our powers of judgment. Purely mechanical acts (such as Kant conceived for us) cannot yield valid judgments, for validity is a value judgment presupposing freedom of action and of choice. Machines or computers may of course be programmed to do as we will them to, but in such cases it is still our judgments that are evaluated, not theirs.

Since ratiocinations, and thence all thought processes, are acts of the Subject, and the Subject is a non-phenomenal entity known only through intuition, *they cannot readily be pointed out in phenomenal terms*. We can perceive their phenomenal products in us, but the productive acts themselves can only be apperceived, i.e. known introspectively by each one of us. For this reason, it is rather difficult to pin them down publicly. We can say that they occur, but we cannot describe them in terms of something more concretely manifest than our self-knowledge. That is no doubt why many logicians tend to ignore this important field of logic. Ratiocination is too insubstantial and psychological for their liking. They prefer to dwell on more solid and verbal objects of study.

None of this material is very new within my own works, or in general. What is being emphasized here is the need to be aware of all the little rational acts that underlie the larger, more commonly studied, movements of thought. A lot of work might be done by future logicians, to expand on this list and describe the acts involved more precisely, but we shall rest content with the present illustration. A more systematic study would ideally involve traversing the whole of formal logic in detail and noting the exact ratiocinations underlying each item in it. This field of logic could be called descriptive or generative (as against formal) logic[148].

Logic is mostly dished out to people like a menu, and a menu is of course no substitute for cooking and eating. The traditional rather static presentation is inevitable, as logic is a verbal educational tool; but we must try to keep in mind and somehow bring to the fore the more dynamic aspects, if we wish to give a true picture of logic. That is, how logic is "cooked up" by logicians and how it is "eaten up" by those who study it.

Conclusions. Some of the items we have listed are comparable to Kant's categories. For instances, the first and second ratiocinations, viz. affirmation and denial, obviously correspond to Kant's first two categories. The ratiocinations concerning numbers are related to Kant's category of quantity. The ratiocination of proposing (which is, note well, dependent on other acts) can be assimilated to Kant's categories of relation. Nevertheless, the two approaches are clearly different. Kant's categories are on the whole not as basic constituents of human knowledge as the ratiocinations are.

There is a complex scale of gradation and interplay of mutual dependencies between most of our basic concepts. Some can surely be considered as direct outcomes of primary acts of reason. But others are complex products of many and varied such ratiocinations. It would be a gross simplification to lump all basic concepts together as equal "categories", let alone assign

148 Or perhaps psycho-epistemology (borrowing the term Ayn Rand coined for another purpose).

them special powers of control over our thinking, as Kant attempted. There is no basis for considering our faculties of cognition as machine-like entities, which – using some arbitrary, possibly crazy "logic" of their own or programmed into them by nature – could well distort our experiences.

Space and time are, like substance and causation, rather basic *concepts*, which we form in quite ordinary ways by abstractions from experience. It is because we find the phenomena we experience (be they seemingly physical or mental) are extended, are changing, are seemingly constant in the midst of other changes, and are regularly conjoined and disjoined, that we form such concepts. Let us keep the horse before the cart. These concepts do not tell *us* what to think out of the blue – we make *them* what they are in accord with the way things seem to us in experience and in logic. They are tools of ours; we are not their playthings.

Furthermore, conception has many levels or degrees. At the lowest or notional level, it is produced by wordless rational acts, for instance just noticing that two things are distinctly alike in some respect and mentally classing them together on that basis. More precise measurement of the similarity may be sought. It may be decided that the items are worth not only grouping together, but also naming. Once the concept is named, it may become the object of detailed discussions. At an advanced stage, it may be more and more studied and complex theories about it may be formed.

Thus, we should not confuse the humble uses of the *wordless concepts* of space and time in particular acts of reasoning, with the grand *intellectual abstractions* and debates of physicists and philosophers about them. Similarly with regard to many of the categories. An ordinary person can properly identify a causal relation without being able to discourse on the ontological and epistemological basis of causality. If we do not keep this distinction of conceptual level in mind, we are likely to get confused about the order of things in knowledge. Kant tended to blur it.

To conclude the present essay, although Kant has been an extremely impressive and influential philosopher in the modern Western tradition, his description and critique of reason are far from credible and ought not to be taken so seriously. He was clearly in no position to criticize reason, because he evidently neither sufficiently understood its workings nor had the logical tools needed for such a task, lacking especially knowledge of the logic of paradox and that of induction.

7. How numbers arise

If we pay attention to the *ratiocinative acts at the foundations of mathematics*[149], we notice the following intentions or mental movements:

First, there is the mental ***isolation*** of something from its immediate experiential context, intending "this *and not* the rest of it". A part of present experience is focused on, mentally delimited and considered virtually apart from the other parts of present experience. This makes possible the formation of the mathematical concept of '**one**' (symbolized by a '**1**'), which is the elementary unit at the basis of all subsequent rational activities of computation or calculation.

Second, there is the mental ***conjunction*** of a selection of two (or more) such units, intending "this *and* that (or those)". The units concerned may all be present in current experience, or some or all of them may have to be brought to mind by memory. This is the basis of the mathematical concept of 'addition' (symbolized by a '+'), which gives rise to compounds of units, i.e. natural numbers greater than 'one' (viz. 'two', 'three', etc.).

Third, there is the mental ***identification*** of two (or more) such selected units, intending or declaring them to be 'effectively the same', 'numerically equivalent', 'quantitatively equal' (this being symbolized by the '=' sign). Equivalence or equality between two items means that either item can in practice be *substituted* for the other with regard to numerical value or quantity, even though symbolically they may be differently constituted (e.g. as two ones and one two)[150].

Thus, first comes the idea of "1".

From this, we build up the series of natural numbers, two, three, etc., by a succession of additions and equations, each of which relies on the preceding, ad infinitum: 1=1; 2=1+1; 3=2+1; 4=3+1; … etc. This gradual and infinite construction is enshrined and recalled in the process of *counting*: 1, (+1=) 2, (+1=) 3, (…) 4, (…) 5, 6, 7, … etc.

These definitions allow us to work out simple arithmetical inferences or proofs, by way of various appropriate substitutions. For example: 2+2 = 4 is derived from 2+2 = 2+(1+1) = (2+1)+1 = 3+1 = 4. The brackets '( )'are here used to signify our changing mental focus on the numbers involved.

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[149] See also my earlier comments on this topic, in *Phenomenology* (II.4 and VIII) and in *Ruminations* (9.10).

[150] And of course, even though, the things we may have in mind behind the figures, e.g. apples and oranges, may be different in various respects.

We are now able to invent a fourth useful mathematical operation, viz. *subtraction*. This formalizes the idea of mental ***exclusion*** of some unit(s) from a set of units under consideration. Thus, for example: having two things, removing one, leaves one; this is symbolized (using the 'minus' sign, written '–') as 2–1=1. Similarly: 3–1=2; 4–1=3; and so forth (compare to the series of additions and their derivatives).

A special application of this idea of mental removal yields our concept of '**zero**' (symbol '0'). "Given just one thing under consideration, if we remove this one thing, what are we left with?" The answer we give to this question is "zero", which construct we interpret as the ***negation*** of all other numerical concepts. That is, we intend by this 'number' an absence of any unit or collection of units (and later even of fractions of units, etc.); this is how we define zero.

In the same manner, the operations of 'multiplication' and then 'division' can be introduced, and mathematics as we know it can be gradually built up.

All this is simple and straightforward enough, and generally well known. Granting this obvious account, our next question has to be: "is mathematics, then, something 'subjective' or 'objective'?" That is, what is the *ontological status* of numbers?

Historically, mathematics no doubt stems from the material experiences and needs of humans. We can well imagine how necessary economic activities like *isolating* a cow from a herd[151], or *gathering* cattle in a pen, or *exchanging* a cow for some sheep, would in time (as life increased in complexity) give rise to the more abstract ideas of mathematics described above.

Raw experience is evidently non-numerical. It is just a whole, without parts. Nature itself is continuous. It is we, who experience it, who mentally cut the whole into parts, which we mentally regroup in various ways[152]. We do not, however, engage in such acts randomly and arbitrarily, but (more or less) intelligently and rationally.

Without humans (or beings with similar cognitive and volitional powers), *there would be no numbers*, since the unity of all things would never be put in question. It takes humans to discriminate between various aspects of the variegated whole, and thus distinguish ones within a background of many, and so forth.

But this construction of number is neither entirely objective nor entirely subjective. That is, it is not given in experience in the way of raw data, but it *still relies on experience* for its formation. Thus, mathematics is not a mere convention, but a mental organization of data in accordance with its observable features.

That is to say: without humans (or the like), events like "one plus one equals two" would not actually arise in the world; yet humans cannot say "one plus one equals three" without thereby contradicting their experience. Thus, mathematics is a product of the experience and understanding of human beings, and not some wild fantasy of theirs.

I submit that the above presentation of numbers theory is an accurate account of how numbers actually arise in the minds of individuals, and how they actually arose in the course of human history. It is not intended as a mathematician's description of events, or a psychologist's, but

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151 To eat it, or give it or trade it.

152 When I say mentally, I mean by projecting divisions and groupings; i.e. imagination or even hallucination is used.

as an epistemological account. The latter is more fundamental, and fits numerical concepts in with non-numerical ones in the wider theory of knowledge.

Some comments on "modern maths". I say this of course with "mathematical logic" in mind. In modern times, starting in the 19th Century, attempts were made to logically streamline arithmetic, better explain it and fit it in the larger context of our knowledge. This is naturally a worthy undertaking, but some erroneous presuppositions were made in the course of it and some unjustifiable inferences were drawn from some of the results obtained.

We may here mention, as a major example, the work of **Gottlob Frege**[153]. His goal was to make more explicit all the logical steps involved in the development of arithmetic. But in pursuing this commendable goal, he thought he was engaged in purely formal and deductive acts, and did not realize the extent to which he was actually depending on experience and conceptual insight.

This is evident for example in the way he developed cardinal numbers, defining them by reference to disjunctions of members of a set (if I am not mistaken). A set with one disjunction would have two members, one with two disjunctions would have three members, and so forth. Now, this is ingenious, and seems to reduce numerical development to a series of purely logical statements, relying only on abstract concepts like identity and difference, sets and members, and disjunction (i.e. negation of conjunction).

But we can ask many questions. First, does this way of presenting things correspond to the way humans actually conceptualize numbers, as individuals and collectively in history? The answer is, I suggest, no. Frege's system may well be interesting to logicians and mathematicians as an abstract ex post facto ordering of mathematical knowledge acquired till then, and as a way to develop new mathematical knowledge, but it is essentially an artificial and recent construction.

It is more an abstract game than a description of how human knowledge of numbers occurs in practice. Such a construct cannot be said to radically discredit and displace the arithmetic notions that precede it. This would be committing the genetic fallacy, i.e. forgetting the debt owed to what came before in the human mind. It is only because we have already assimilated numbers that we are now able to play around with them the way Frege does.

Secondly, to fully understand this, and agree with it, consider when, where and how the concepts Frege uses in his system arise. It is a misrepresentation to think that he is functioning on some entirely abstract and mechanical plane, without appeal to experience or inductive reasoning. Does he anywhere reflect on how we have knowledge of identity and difference, sets and members, and disjunction (i.e. negation of conjunction), in specific situations and in general?

If we do reflect on these issues, a bit more deeply than Frege ever did, we quickly realize that these concepts are not so simple and primary. Identity and difference involve the cognitive acts of comparison and contrast, which rely on experience and on its subdivision. This indeed occurs before the number one (1) is first grasped, as above mentioned; but the point made here is that it is not as instantaneous and mechanical as Frege imagines.

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[153] Germany, 1848-1925. Though Frege did not himself draw any larger philosophical conclusions from his results, his contemporary Bertrand Russell did so.

The concepts of sets and members, and even that of negation, are effectively taken by him as primaries, whereas they require much, much study and reflection to understand and use. It is true that children routinely grasp them enough to use them, but that only goes to show the native intelligence of the human species. In truth, if we want to "formalize" their thinking in the way Frege tries, we have to first clarify the genesis of such abstractions in detail.

Why, for instance, refer to disjunction, when conjunction precedes it in knowledge? We only understand disjunction by negation of conjunction. So to explain numbers through conjunction as above proposed, is the more natural way – and this is the way real humans proceed. I do not pretend to be a mathematician, but I feel safe in saying that a mathematical system based on natural numbers developed by successive conjunction of units is just as good, if not better than Frege's contraption.

It does not follow from such reflections that mathematics is something psychological, i.e. that we need to study psychology to get to mathematics, or anything of the sort. What it does mean is that if you study "mathematical logic" without asking and answering the deeper epistemological questions, all you will have is an abstract construct.

You should not, thereafter, boast to have done away with or replaced epistemology; all you have done is ignored it. You have flexed your muscles in manipulation of symbols, but you have not demonstrated insight into how you actually functioned while doing so. Your "proofs" are then just superficial processes, which do not take into account every assumption hidden within them.

This is not intended to mean that so-called mathematical logic is not objective, i.e. is necessarily divorced from reality in some significant way. What it is intended to mean is that such studies occur in a sandbox, without proper awareness of the wider world.

8. Geometrical logic

It is worth briefly investigating reasoning with propositions we might call 'geometrical'[154], which compare the relative positions in space of two geometrical items (points, lines, surfaces or volumes) X and Y. This refers principally to the following set of forms, which are commonly used in discourse:

'**X is *in* Y**', '**X is *out of* Y**', or '**X is *partly in and partly out of* Y**'.

These forms are implicit in Euler diagrams, which are often used by logicians to clarify and resolve syllogistic issues. For example, the syllogism 'X is Y and Y is Z, therefore X is Z' is read as 'X is in Y and Y is in Z, therefore X is in Z'. In such cases, predication is interpreted as subsumption, or membership in a class, and the geometrical analogy is then obvious.

Deductive features. With regard to their logical *oppositions*, the said three forms are evidently contrary to each other. The 'in' form is here intended to mean 'wholly inside'; the 'out of' form, 'wholly outside'; and the 'partly inside or outside' form is intended to cover cases in between. It follows that if we use the indefinite form 'X is (at least) partly in Y', we mean the disjunction 'X is either wholly in or only partly in Y'; and similarly for 'X is (at least) partly out of Y'.

Thus, '*not* (wholly) in' here would mean 'either only partly in or wholly out of'; '*not* (wholly) out of' would mean 'only partly out of or wholly in'; and '*not* partly in and *not* partly out of' would be understood as 'either wholly in or wholly out of'. It follows from these oppositions that we can educe the negative forms 'X is not outside Y' and 'X is not partly in and not partly out of Y' from the positive form 'X is inside Y'; and similarly in the other cases.

Note that such propositions cannot be 'permuted' at will. That is to say, just because we have verbalized the relation concerned with two or more words like 'is in' or 'is out of', it does not follow that we can freely separate these words from each other, treating one as the effective copula and the rest as part of the predicate. For instance, treating 'X is in {Y}' as logically equivalent in all respects to 'X is {in Y}' – for to do so may lead to errors of reasoning[155].

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[154] I had the idea of developing this topic following a debate with Plamen Gradinarov in one of his Internet sites relating to Indian logic.

[155] See my work *Future Logic*, chapter 45. Note that we sometimes do verbally permute geometrical propositions. For example, 'the worm went underground' fuses the words 'under' and 'the ground' as if they formed a predicate, although the spatial relation of 'under' is formally more precisely tied of the copula 'went'. This is more obvious if we contrast 'the worm is aboveground' – if the expressions 'under' and 'above' were indeed inextricably tied to the word 'ground', we would not realize

As regards *syllogism* involving these six forms (the three positives and three negatives), we would simply refer back to Aristotelian methods and findings – i.e. consider all possible moods within three (or four) figures, and determine which are valid and which are not. I won't bother doing this here systematically, but leave the job to the reader as an exercise.

Suffices here to give just a couple of examples. The example given earlier, viz. 'X is in Y and Y is in Z, therefore X is in Z', is the most obvious case, suggesting a circle X, within a larger (or equal) circle Y, within a larger (or equal) circle Z. A more interesting example would be the following:

> Y is wholly in Z (major premise),
>
> and X is only partly in Y (minor premise);
>
> therefore, X is either wholly in or only partly in Z (valid conclusion).

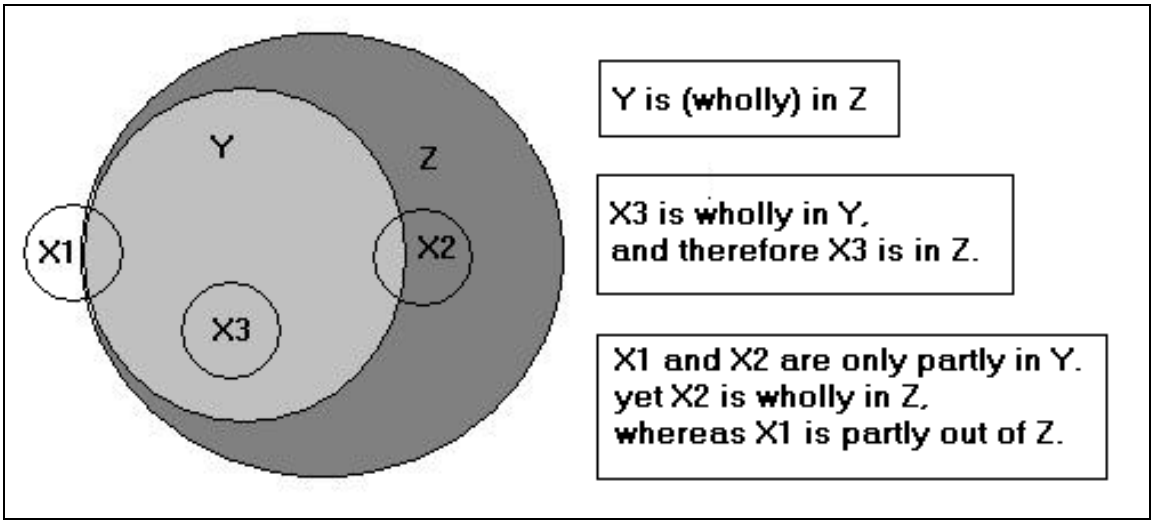

Figure 1 A syllogism with geometrical propositions.

These arguments can be illustrated as in the above diagram (where X3 represents the first syllogism's minor term, while X2 and X1 the two conceivable values of the minor term in the second syllogism). Note that while such an Euler diagram traditionally presents the intersecting domains as circles, we should not take this literally – *they might have any shape or even be physically scattered*, so long as the relevant intersection(s) apply.[156]

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that they are two relations the same worm might have to the same ground. Or indeed we might forget the third possible such relation, viz. 'partly above, partly below' the ground. In any case, we would miss out on syllogistic reasoning specific to geometrical propositions – for example: the premises 'X is {in Y} and Y is {in Z}' would yield no conclusion, since they lack a common middle term (i.e. 'Y' is not logically identical with 'in Y').

[156] With regard to methodology, it should be stressed here that logical issues cannot be credibly settled by only proposing concrete examples (as some amateur logicians are wont to do). Particular premises may *seem* to yield a categorical conclusion, because that 'conclusion' happens to be true in that particular case (independently of the reasoning process), although in fact – when we consider the

The account here given of geometrical propositions and arguments does not, of course, cover the whole field of geometrical logic. Other commonly used forms may be mentioned, many of which are compounds involving the above forms. We may, for instance mention the forms 'X is close to Y' or ' X is far from Y' (both of which imply X is outside Y). A special case of adjacency would be: 'X is contiguous to Y' (meaning the boundaries of X and Y are in contact at some point(s) of their boundaries). Such propositions may of course appear in combination with the others in mixed-form syllogisms.

Comparative propositions, like 'X is bigger than Y', 'X is smaller than Y', 'X is equal in size to Y', etc. are also to be classed as geometrical forms. So are propositions signifying sequence, like 'X is before Y', 'X is after Y', 'X is simultaneous to Y', etc. Other common forms: 'next to', 'on top of', 'under', 'east of', 'west of', etc. indicate relative directions. The point made here is that the whole field of geometry (as a branch of mathematics and eventually of physics[157]) has a parallel in formal logic, which focuses on the specifically *discursive aspect* of geometrical thought – and this may be called geometrical logic.

Inductive aspects. When the conclusion of an argument is uncertain, in the sense that we have a disjunction of two (or more) possible categorical conclusions as our valid formal inference (as in the second example of geometrical syllogism, illustrated above), the syllogism is still quite *informative,* in that while there is indeed more than one conceivable result, many other theses are thereby formally excluded (e.g. the conclusion 'X is wholly in Z' [as shown for X3] is excluded from the premises 'X is only partly in Y and Y is wholly in Z'), i.e. rendered logically inconceivable.

Another point worth making with regard to such alternative conclusions is that they may not have the same *degree of probability*. If the situation in our above second example is exactly as described by our Euler diagram (although, to repeat, this illustration is only one possible visual interpretation), then the outcome labeled X2 would seem more probable than the one labeled X1. Clearly, there are many more places around the circumference of Y where X2 might lie; in comparison, X1 has a very limited scope. In that case, we could say that the conclusion of the premises 'X is only partly in Y and Y is wholly in Z' is most probably 'X (i.e. X2) is wholly in Z' and less probably 'X (i.e. X1) is only partly in Z').

Note this last comment well, because it relates to the interface between deduction and induction. One way to define the distinction between these two types of inference is to regard single conclusions as deductive and multiple possible conclusions (especially when their relative probabilities have been worked out) as inductive arguments; in that perspective,

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issue more formally – there may be two or more possible conclusions. For instance, "the box is on the truck and the truck is in the garage, therefore the box is in the garage" might superficially seem correct (because in some cases it happens to be so) – but in fact the correct conclusion is "the box is at least partly in the garage, but it may be partly out" (for the box may be much longer than the truck). On the other hand, of course, a single concrete case may on occasion suffice to invalidate a proposed form.

[157] Geometry deals with mathematical abstractions, which do not necessarily have obvious material expression. For example, if we say 'the planet Earth is in the Solar System', we do not mean that the Solar System has a visible physical boundary. We would rather think of its boundary as being the outer limits of the gravitational pull of the Sun and the planets and other bodies close to it (versus the pull of other eventual bodies in the same galaxy) – beyond which a body would travel off unhindered. That effective boundary may of course be variable as conditions change.

deduction is the limiting case of induction, when the probability of a certain conclusion is one hundred percent. We could alternatively view such disjunctive formal conclusions to some syllogisms as being as 'deductive' as categorical conclusions; but in that case, the expression 'deductive' simply corresponds to what we mean by 'inference'.

These two viewpoints can be reconciled if we understand the difference between focusing on the inferred disjunctive proposition as a whole, which is forcefully 'deduced', and focusing on the individual disjuncts composing it, which may eventually be variously 'induced' in accord with of their relative probabilities (which, note well, require further argumentation to establish).

When the disjuncts are ordered by their respective probabilities, it means that the most probable disjunct is our first choice as conclusion. If this choice turns out to be belied by other considerations (i.e. by further experience or other, more reliable conceptual inferences), then we opt for the second most probable disjunction. If the latter is also eliminated, we go for the third, and so forth, till (if ever) we are left with only one option. This is of course the process of *adduction* – where, faced with more than one solution to a problem, we opt for the most credible solution, but may gradually be driven (by the concrete evidence or abstract issues) to prefer initially less obvious solutions.[158]

But note too that in some cases even the least probable option may eventually be found (empirically or otherwise) wanting! In such a case, we would have to backtrack through our chain of reasoning to find out exactly which assumption we made earlier needs to be *revised* so as to recover a logical situation. For it is logically unacceptable that *all* the valid alternative inferences from true premises be found false. If the consequent of an antecedent is certainly false, the antecedent cannot be entirely true but must contain some error.

Note here that, in view of the possibility of erroneous premises in deduction (whether the conclusions ultimately be found true or false), deduction is much more tentative than it seems at first sight. In that sense, deduction ought to be viewed as one tool in the toolbox of induction (together with observation, generalization and particularization, adduction, and so forth). Even the results of direct applications of the laws of thought are ultimately inductive, in the sense that the empirical or conceptual data the laws are applied to are products of prior induction.[159]

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[158] To give a specific traditional example: suppose I see something that resembles phenomena I have in the past labeled "smoke". I cannot immediately call it smoke without risking error. Before I apply the same label to my new visual experience, I have to diligently ensure it fits in the conditions of applicability previously established (or I may have to adapt those conditions). Thus, I would want to sniff and find out if what I have just seen not only looks like smoke but smells like smoke. If I cannot be sure that the smell came from the same source as the sight, I may have to test the matter further by looking for an underlying fire. Better still (since smoke is not always accompanied by visible flames or tangible heat), I may chemically analyze the phenomenon. If it turns out to consist of H_2O, for instance, I would conclude it to be not smoke but mist. If on the other hand the chemical composition is found to be consistent with the composition previously established for smoke, I can at last with reasonable probability conclude that what I saw was smoke (unless or until some further objection is proposed). This is the process of adduction in observation, classification and naming: gradually eliminating alternative interpretations of an initial observation by means of additional observations and arguments; narrowing down the possibilities until we can attain reasonable certainty.

[159] I am here referring to arguments showing up a self-contradiction in some idea or thesis; for example: it is self-contradictory to say "all knowledge is false". The point made here is that, in the latter example, we depend on understanding what is meant by "all", by "knowledge", by "is" and by "false"

Since deduction is impossible without some given information from which further information might be deduced, all knowledge is ultimately inductive. All knowledge requires some sort of experiential input (whether sensory, mental or intuitive) from somewhere or other to take shape. Deductive logic is simply the ordering of such knowledge with reference to the laws of thought (identity, non-contradiction and excluding the middle).[160] These comments are in no way intended to devaluate deduction. We can point out, conversely, that induction beyond plain observation is impossible without some deduction, and that the moment we begin to analyze and synthesize purely empirical data, we are engaged in deductive acts.

Our interpretations or explanations of given data may variously be referred to as inductive or deductive conclusions, according to where we put the emphasis. If we want to stress the tenuousness of the result, we call it inductive; if we want to underline the rigor of our reasoning, we call it deductive. A merely 'most probable' conclusion is still deductive, in the sense that it is the best possible hypothesis in the context of knowledge available. This means: given the premises available, we can indeed deduce that conclusion; but if we were (or are later) given additional (or modified) premises, another conclusion might be deduced.

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before we can realize that saying so is itself a claim (to an item of knowledge that is true) and therefore is self-contradictory. Indeed, even the concept of self-contradiction has to be understood. It follows that no act of reasoning, however primary, is ever deductively an island unto itself; there's always some element of induction beneath the surface.

[160] Granting this reflection, it is easy to see the foolishness of Kant's "analytic/synthetic dichotomy"; and similarly, of the work of logicians who assume there is such a thing as "purely deductive logical systems". Such philosophers and logicians do not stop to ask how they managed to obtain their knowledge apparently out of nowhere. There is a failure of self-criticism on their part; they assume their insights to be irreducible primaries, as if they have been granted an epistemological privilege.

9. Addenda (2009-10)

1. About induction in chapter 1. It should be noted that induction of the content of propositions and **induction of formal relationships** between them (oppositions, eductions, syllogisms, and so forth) are subject to distinct rules.

To induce a proposition of whatever form with specific *contents*, i.e. a 'material' proposition (so-called in contrast to formal propositions, whether it concerns concretes or abstracts of matter, mind or spirit), one must have *some empirical evidence* that the relation concerned occurs in at least some instances. (This is ultimately true, taking knowledge as a whole: although of course some of our particular propositions are obtained from other propositions by deduction, the information that we deduced them from must eventually be grounded in experience.) Thus, for example, a proposition like 'some swans are white' requires that we actually observe some 'white swans'. We would not ordinarily (i.e. usually, ignoring deductive intermediaries) accept the proposition that 'some swans are green [like parrots]' without having witnessed the fact. From such empirical particulars all our general knowledge is eventually derived, whether by generalization and particularization or by adductive reasoning (or by deduction from general propositions so derived).

This methodology does not apply to *formal principles*. The starting point of formal logic is the assumption that the relationship between any two forms of proposition is simple compatibility – *until and unless* they and/or their negations are shown to be incompatible in some way. Contrary to the claim of some modern logicians, we cannot "*prove* compatibility". We can show examples - but the compatibility in the examples is in fact simply assumed because no *in*compatibility is found/proved (if only by logical insight). We must be careful in this context not to place the cart before the horse. Our attitude of demanding proof is correct, and our method of adducing example(s) is correct – *for content*. But for *form* – i.e. in formal logic – the procedure is the reverse: we must prove the implications rather than the non-implications.

For example, in the case of the doctrine of oppositions, the way we proceed is as follows: there exists (according to the laws of thought) only seven possible oppositions: contradictory, contrary, subcontrary, implicant, subalternating, subalternated, unconnected, it follows that when we cannot prove anything regarding the opposition between two propositional forms P and Q, we must assume them to be unconnected. Simply because: *there is nothing else for them to be*![161] We always proceed *by elimination of unproven alternatives*. We demand proof

[161] Likewise, if we cannot prove both that P and not-Q cannot both be true and cannot both be false, then P and Q cannot be assumed to be implicants. If we cannot prove that P and not-Q cannot both be true, then P cannot be assumed to subalternate Q. If we cannot prove that P and not-Q cannot both be false, then P cannot be assumed to be subalternated by Q. If we cannot prove both that P and

for the hard relations, not for the soft. The latter follow automatically, by virtue of our not having proven the former. That is the way logicians always proceed. To search for compatibilities is redundant, because there is no way to do it without circularity or infinity. Imagine all the propositional forms in the world now or ever: we do not have to show them all compatible before we use them. They are considered compatible until and unless we manage to show them otherwise.

2. Amplifying the conclusion to chapter 2. Kant defined an **analytic proposition** as one whose predicate is "contained" (i.e. immediately given and manifest) in the subject. This meant that the subject-concept was to us unthinkable without the predicate-concept, so that we could readily mentally extract the latter from the former both a priori (i.e. without recourse to experience) and necessarily (i.e. with utter certainty). My contention is that there is no such mental process as Kant's analytic. Kant and indeed many people do believe that they can extract certain predicates from certain subjects without recourse to experience and with utter certainty; but this is an error on their part due to insufficient introspection and reflection. Such extraction does occur - but it is not a priori or logically necessary deduction: it depends on experience and it can result from erroneous processing of information. It does not tell us how the predicate concerned originally *came to be known*, but is just an ex post facto recall of an already formed opinion or decision. Thus, the very concept of analysis as proposed by Kant is wrong - and *all* propositions must be regarded as essentially synthetic in his sense of the term. Even the four laws of thought and the formal logic derived from them are synthetic, note well.

Underlying the wrong belief in Kantian analytic propositions is the Kantian belief in **a priori** knowledge. My contention, here again, is that no human knowledge is purely a priori - all human knowledge is to various degrees a posteriori. As I have argued, even Aristotle's three laws of thought and the principle of induction depend on some experience to at all come to mind and be understood and believed. They cannot exist in a vaccum, as a thought thoroughly devoid of all content. They are the closest we can get to a priori thought - but they cannot conceivably be 100% a priori. Thus, the Kantian idea of a priori is a mere figment of his imagination, too. We can use the term to refer to involvement of rational acts (in contrast to pure experience) in the formation of judgments - but we may not conclude from such use that there are judgments that are entirely rational (i.e. devoid of any experiential content whatsoever).

It follows from these considerations that Kant's search for "synthetic a priori" propositions is a red herring. All propositions are synthetic - even those that seemed to him to be analytic. And no propositions are purely a priori - they are all to some extent a posteriori, i.e. dependent on experience at some stage. In other words, all propositions are synthetic a posteriori (whether they be logically necessary or logically contingent).

3. With regard to the chapters about the categories, about ratiocination and about numbers, a little more need be said in relation to **the more abstract quantitative concepts**

Q cannot both be true and cannot both be false, then they cannot be assumed contradictory. If we cannot prove that P and Q cannot both be true, then they cannot be assumed contrary. If we cannot prove that P and Q cannot both be false, then they cannot be assumed subcontrary. If none of these underlying relations can be proved, the two propositions must be taken as unconnected.

used in logic, namely: all, none, some, some not, and the like. How can these concepts be defined in ways that avoid circularity?

I think that we must regard "all" (or "every") as a very early ratiocination, a sense of full inclusion of the set of units under consideration. Inclusion suggests belonging (being "in" a group) and conjunction ("and") with others; the group is "full", when no further units are admitted into it. At first the concept "all" refers to finite sets; but later we must extend it to non-finite or (more precisely put) open-ended sets, i.e. sets some of whose items are not yet identified. Next in the order of things comes the negative equivalent this concept, viz. "none", which means "all not", i.e. "not any", the expression of negation "not" being of course another very primitive notion/concept.

From these two universal concepts we can by conjunction derive the definite particular "some and some not", which may be defined as "neither all nor none". The three concepts "all", "none" and "not all and not none" are seen to be contrary, i.e. mutually exclusive (only one of them can be true) and together exhaustive (not more than two of them can be false). Now we are able to define the indefinite particular "some" as the common quantity in "all" and in "neither all nor none", and "some not" as the common quantity in "none" and in "neither all nor none". Alternatively, we can say that "some" means "not none", i.e. (more positively put) one or more up to all, and "some not" means "not all", i.e. (again more positively put) less than all or even none.

Other abstract concepts of quantity, namely many, few, more, less, most, least, can be similarly clarified in non-circular ways, by comparing sizes or proportions of subsets. So much for quantity.

With regard to modality, we do not have to proceed in the same way, since the categories of modality are defined with reference to the already developed categories of quantity. That is to say, whereas for quantity it seems best to start with "all" to avoid circularity, for modality we need not start with necessity (meaning: under all conditions) but may equally well start with possibility (meaning: under some conditions), or however we choose, without risking any circularity.

4. I have mentioned Euclidean and non-Euclidean geometries in chapter 4. With regard to **the axioms of geometry**, I would like to add the following. These axioms are induced – that is to say, they *seem* true (at a given time in history, to certain persons), and we 'generalize' from such appearance that they indeed *are* true. Such generalization from 'seems to be' to 'is' occurs not only in geometry, but in all fields. It is always performed, like all generalization, with a tacit or explicit proviso. We think: this is so, until and unless a contrary appearance or insight comes to the fore; if one does, then we will as a matter of course review this generalization, and perhaps decide to particularize it.

This should be obvious; but it needs to be reminded, because certain commentators tend to dramatize the movement from Euclidean to non-Euclidean geometry as a sort of antinomy, i.e. as something contrary to reason. No, reason takes it all taken in stride.

Book 3. IN DEFENSE OF ARISTOTLE'S LAWS OF THOUGHT

In Defense of Aristotle's Laws of Thought addresses, from a phenomenological standpoint, numerous modern and Buddhist objections and misconceptions regarding the basic principles of Aristotelian logic.

Many people seem to be attacking Aristotle's Laws of Thought nowadays, some coming from the West and some from the East. It is important to review and refute such ideas as they arise.

1. Logicians have to introspect

The task of logicians may be described as an attempt to understand whether, how and to what extent alleged knowledge can be related to something we label 'reality'. This effort is called 'logic', especially when focused on the forms of discourse. Ranging more broadly, in association with 'phenomenology' (the study of appearances as such), it becomes 'epistemology' (the theory of knowledge) and/or 'ontology' (the theory of being).

Logic is first a *descriptive* science, a detailed observation of how we think and acquire our knowledge (or, more cautiously put, our opinion). Secondly, logic is a *prescriptive* discipline – having carefully observed how we think, we become able to judge our thought processes more lucidly and decide which are credible and which are not. Thirdly, these descriptive and prescriptive findings have to be collected and systematized.[162]

The first issue to be clarified is what we mean by '***thought***'. Thought is not, as some believe, a "stream of consciousness". It is, rather, a stream of *contents of* consciousness. 'Consciousness' is what relates us to objects when we cognize them. Consciousness as such is always the same, whatever it relates to. It is the 'contents' of consciousness that change over time. These are whatever appears before us of which we are aware to any degree. This includes apparently external "sensory" perceptions, the apparently internal perceptions of our "mind's eye and ear", our intuitions of self and its functions – and conceptual products of all these.

In a more psychological perspective, thought consists of nonverbal intentions and rational acts, verbal ideas and discourses, reminiscences, anticipations, fantasies, plans, calculations, judgments, decisions, explanations, accusations, justifications, and so on. These may be qualified as useful or idle; positive, negative or neutral (i.e. for or against something or someone, or neither way inclined); pleasant, unpleasant or without emotional charge; and so forth.

Man tends to reflect on his experience, to varying degrees. We are rarely content with passively observing experienced particulars, but usually actively seek out generalities regarding them. Why? Because thinking in terms of generalities seems cognitively more economical and efficient. Thoughts may, of course, be focused on particulars as well as on generalities.

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[162] The term logic with a small 'l' may colloquially be applied to any sort of *discourse*, be it 'logical' or 'illogical', i.e. valid or invalid logic. When we wish to refer to the science of logic, i.e. to rigorous modes of thought, we may write Logic with a capital 'L'. However, to always use a capital becomes tedious for writers and readers, so we usually revert to use of the word logic even when we mean Logic. Context should make clear what our intent is.

Most thought is particular, in the sense that it is concerned with specific *individuals*. Such thoughts are about me, you, or some other person(s), or about some other individual object(s) under discussion. Some thought is, however, discourse in pursuit of principles. The latter thoughts are composed of statements applicable to all things *of a kind*, and/or statements denying such generality. They may include propositions about individuals, but only incidentally, insofar as these provide adductive basis (i.e. evidence) for principles, or illustrative examples.

All general thoughts are inductively based on, and deductively imply, some particular thoughts. Most particular thoughts involve some general thoughts (for instance, a singular syllogism needs a general premise to yield a valid conclusion), and they usually occasion some general thoughts. As well, thoughts about an individual may involve generalization and particularization, e.g. regarding that individual's appearances or behavior patterns. Note also, the negation of a particular is a generality.

The most elementary acts of thought may be called *ratiocinations*. This refers to primary rational acts like affirming and denying, comparing and contrasting, equating and differentiating, isolating and assembling, conjoining and separating, estimating relative measures or degrees, and so forth. The more complex thoughts and thought-processes that we study in formal logic – such as predicative and other propositions; syllogism and other deductive inferences; generalization, adduction and other inductive arguments – are built up of numerous such ratiocinations. The latter might be called *cogitations*, to distinguish them.

Thoughts may be thought without or before the use of words (i.e. meaningful symbols of any sort).

Thought is quite often (more often than people are aware of) non-verbal, or more precisely put – pre-verbal. In such unspoken thought, ideas are expressed by mere intentions (which are acts of will by the Subject). Moreover, verbal thought is rarely exclusively verbal; there is usually in the background of it some visual and/or auditory projection going on (directly from memory or after manipulation by imagination), and also some related emotional and sensory phenomena, all of which are part of the overall thought.

We might call verbal thought *discourse*, because once we put a thought in words it acquires a stringy character[163]. Often, a thought is completed well before it is verbalized; it is finally put in words only to render it more publicly accessible. However, very often verbalization is necessary for successful thought; words in such cases render thought more controlled, efficient and precise. But it is also true that, if excessively indulged, words may weigh down, obscure and confuse thinking.

When discourse is aimed at the discovery of principles, it may be called *intellection* (or intellectual thought)[164]. The latter term refers ideally to reasoned philosophical and scientific inquiries; but it can also be applied to pseudo-rational discourse, like astrology or alchemy, insofar as such discourse serves the purpose of understanding life or the world through

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[163] Though, by analogy, we sometimes speak of an underlying or implicit discourse, i.e. of unstated implications of explicit discourse and other perceptible acts. The 'string' here referred to may be series of sights and sounds in one's head, a series of symbolic gestures or a series of signs on paper or some other medium.

[164] Intellection is contrasted to non-intellectual discourse, such as speaking about your lunch or your relations with your next-door neighbors. The dividing line is not always obvious, of course.

generalities for the people concerned. That is to say: intellection is not necessarily correct; a political or ethical theory is intellectual, but may be far from true.

However it is manifested, discursive thought may be rational or irrational, according as it relies on and appeals to logic or goes deliberately against it. The nature of logic[165] is of course not immediately apparent to logical thinkers, but must be discovered and studied. Nevertheless, we can reflect ex post facto on this distinction.

A thought, or a part or an aspect of a thought, that asserts anything, i.e. that makes a claim that something is to some degree true or false, or good or bad, or beautiful or ugly, may be characterized as a *judgment*. Some thoughts, or parts or aspects of thoughts, are not judgmental in this sense. All ratiocinations, and all the more so all cogitations, are judgmental in some way.

Gradually, we come to realize that the logical enterprise always involves certain fundamental judgments called the three "laws of thought" and the related "principle of induction". The term 'judgment' is always meant to suggest a 'value judgment' of sorts. But of course in that context it does not have the same meaning as in ethics or aesthetics. It relates to the values of 'truth or falsehood', not (at least, not directly) to those of 'good or bad' or of 'beautiful or ugly'. Such factual value judgments have been called 'alethic'[166].

The logician, then, has two tasks, both of which constitute a broad-ranging, endlessly ongoing, open-ended enterprise:

- One is essentially *observational* – to observe actual thought processes (one's own and other people's), and discern the rational acts they involve and then the forms they take[167].
- The other is more *conceptual* – to logically evaluate the cognitive efficacy of such thoughts, i.e. to determine how fit they are for knowledge of reality, by placing them within a larger context, i.e. in a coherent system of phenomenology, epistemology and ontology.

This is a very important point, which I wish to stress here: budding logicians must learn to make a major effort of *introspection*, literally 'looking inward'. Logic is not a merely analytical discipline – it is mainly synthetic, a product of observation of one's own actual thinking. Other people's thoughts, as expressed in their oral and written discourse, and as suggested by their behavior in action, are also important sources of logical information, of course.

To be an effective logician one must first, then, learn 'meditation', i.e. patient, attentive, precise, present observation of one's actual thought processes. Thereafter, of course, one should observe other people's ways of thinking. One benefit of this habit is to become more

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165 'Logic' being here understood in its absolute sense, rather than with reference to some individual or cultural inclinations and patterns of thought.

166 The term 'alethic' is here used, note well, with the essential connotation of neutral fact (as against, e.g. ethical or aesthetic truths). With this distinction in mind, the foundation of logic could be characterized as an 'axiology'. The latter term (coined early in the 20th century) is used mainly with regard to ethical judgments, but can equally well be applied to study of the laws of thought in general. Another term for this study is 'metalogic'.

167 To observe the forms thoughts take implies to abstract the 'forms' from the 'contents' of numerous thoughts. For example, 'All X are Y' is a form, while 'All living things have genes' is a content.

'self-conscious', in the sense of able to ***reflexively*** turn one's scrutiny on one's own discourse and consider whether or not it fits in with one's own theories about discourse.

All too often, logicians (and more generally philosophers) fail to exercise critical judgment on their own ideas. They are so eager to give their opinion (and become important), and at the same time so afraid to notice their own errors (and so lose self-importance), that they compulsively avoid reflexive thought. In this way, by the way, they lose important opportunities for selflessly advancing their chosen field.

Many logicians have energetically engaged in the task of conceptualization without beforehand devoting sufficient time to the task of observation. For this reason, they have developed systems of logic that have little to do with human thought. Notably: systems that are wholly deductive, and completely ignore the largely inductive nature of human thought. Or again: symbolic systems based on a minimum of simple forms, which completely disregard the immense richness of human forms of thought. This sort of 'logical systems' I would prefer to characterize as pseudo-intellectual games or vanity showcases.

Many logicians[168] have developed their systems on the basis of very rough observations, made incidentally in the past – observations of limited scope, made relatively unconsciously. Consequently, their ideas have tended to be grossly speculative – and they have often erred, setting artificial limits to thought or drawing overly skeptical conclusions. Such logic becomes an exercise in the blind leading the blind.

A very common failure has been omitting to test their theories on themselves – i.e. not taking into consideration the question as to how those theories arose within their minds and how such perceived genesis might affect the theories' evaluation. They rush into the relatively easy task of theory construction without first collecting sufficient data and without thereafter reflexively verifying their theories.

Their inductive methods are poor. Their observations are vague and insufficient. They generalize too early and too far, and fail to particularize when they later come across new, conflicting data. They theorize without adequate checks and balances, and fail to harmonize all conflicting theses.

In view of such unprofessional behavior by many past and present logicians, it is clear that would-be logicians should learn meditation from early on, so as to acquire the required consciousness and mastery of their own thought processes. As one progresses in such meditation, and of course in knowledge and understanding of logic theory, one gets to the level where one is always very aware of the thought processes involved in any discourse (one's own and other people's).

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[168] I am willing to count here some major figures; some examples are mentioned elsewhere in the present volume and other works.

2. The primacy of the laws of thought

Aristotle's laws of thought cannot be understood with a few clichés, but require much study to be fathomed. ***The laws of thought*** can be briefly expressed as[169]:

1. ***A thing is what it is*** (the law of identity).
2. ***A thing cannot at once be and not-be*** (the law of non-contradiction).
3. ***A thing cannot neither be nor not-be*** (the law of the excluded middle).

These three principles imply that whatever is, is something – whatever that happens to be. It is not something other than what it is. It is not nothing whatsoever. It is not just anything. If something exists, it has certain features. It cannot rightly be said to have features other than just those, or no features at all, or to both have and lack features.

A thing is what it is, whether we know what it is or not, and whether we like what it is or not. It is not our beliefs or preferences that make a thing what it is. It is what it is independently of them. Our beliefs can be in error, and often are. How do we know that? By means of later beliefs, based on better information and/or arguments.

However, a thing can have conflicting features in different parts or aspects of its being. Notably, a thing can change over time. So long as these differences are separated in respect of place, time, or other relations to other things, such as a causal relation – the contradiction is not impossible. But if we refer to the exact same thing, at the same place and time, and the same in all other respects, contradiction is logically unacceptable – it is indicative of an error of thought.

Also, we may well have no idea or no certainty what some (indeed, many or most) features of a thing are. Such problematic situations are indicative of our ignorance, and should not be taken to imply that the thing in question necessarily lacks the unknown features, or neither has nor lacks certain features, or both has and lacks them.

All these logical insights are evident in our ordinary thoughts and in scientific thinking. If we look upon our discourse clearly and honestly, we see that our conviction in every case depends

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169 These are of course simple statements, which have to be elaborated on. Note that when I speak of a 'thing' here, I mean to include not only terms (percepts and concepts, or the objects they refer to), but also propositions (which relate percepts and/or concepts).

upon these criteria. Occasionally, people try to make statements contrary to these criteria; but upon further analysis, they can always be convincingly shown to be erring.

These general logical principles, and certain others (notably the principle of induction, to name one), help us regulate our thinking, ensuring that it sticks as close as possible to the way things are and that we do not get cognitively lost in a complex maze of fantastical nonsense.

They do not force us to be truthful, or guarantee the success of our knowledge endeavors, but they provide us with crucial standards by which can test our progress at all times. (More will be said about these principles in this volume, in addition to what has already been said in the past.)

If the crucial epistemological and ontological roles of Aristotle's three laws of thought in human knowledge are not sought out and carefully studied, there is little hope that these little jewels of human understanding will be treasured. It takes a lifetime of reflection on logical and philosophical issues to fully realize their impact and importance.

I marvel at people who think they can show reason to be unreasonable. Leaning on hip, postmodern sophists, like Wittgenstein or Heidegger, or on more ancient ones, like Nagarjuna, they argue confidently that the foundations of rationality are either arbitrary, or involve circularity or infinite regression. They do not realize that their intellectual forebears were in fact either ignorant of logic or intentionally illogical.

Many critics of the laws of thought simply do not understand them; no wonder then that they are critical. They have very narrow, shallow views about the laws of thought; they have not studied them in any breadth or depth. For instance, to some people, brought up under "modern" symbolic logic, the laws of thought are simply X=X, ~(X+~X) and ~(~X+~~X). Given such simplistic, superficial statements, no wonder the laws seem arbitrary and expendable to them.

The laws are not a prejudice about the world, as some critics try to suggest. The law of identity does not tell us about some particular identity, but only tells us to be aware of how and what things are or even just appear to be. The law of non-contradiction does not favor the thesis that something is X, or the thesis that it is not X; it allows for us sometimes facing dilemmas, only forbidding us to settle on the implied contradictions as final. The law of the excluded middle does not deny the possibility of uncertainty, but only enjoins us to keep searching for solutions to problems.

If nothing were known, or even knowable, as some claim, this would not constitute a good reason to dump the laws of thought – for these laws make no claims about the specific content of the world of matter, mind or spirit. They make no *a priori* demand regarding this or that thesis. They only serve to regulate our cognitive relation to the world, however it happens to be or seem. They show us how to avoid and eliminate errors of reasoning.

These laws can for a start teach us that to claim "nothing is known or knowable" is self-contradictory, and thus illogical and untenable.

Such a claim, about the nonexistence or impossibility of knowledge as such, must be admitted to itself be an allegation of knowledge (such admission being a requirement of the law of identity). Therefore, it is unthinkable that any Subject might attain such alleged knowledge of its total ignorance (because such attainment would be against the law of non-contradiction). We could not even adopt a negative posture of denying both knowledge and knowledge of

ignorance (in an attempted bypass of the law of the excluded middle), for that too is an assertion, a claim to established fact, a claim to knowledge.

All these rational insights are not open to debate.

Antagonism to the laws of thought is sure and incontrovertible proof that one is erring in one's thinking. How might such antagonism be *systematically* justified without appeal to those very laws? One couldn't claim to be generalizing or adducing it from experience, for this would appeal to the law of generalization or the principle of adduction, which are themselves based on the laws of thought. One couldn't claim to be drawing some sort of syllogistic or other deductive conclusion, for the same reason. Such antagonism can only be based on arbitrary assertion, without any conceivable rational support.

Arguments like this in favor of the laws of thought are claimed by their opponents to be 'circular' or 'infinitely regressive' – i.e. arbitrary. But to point to the fallacy of circularity or infinite regress is to appeal to the need to ground one's beliefs in experience or reasoning – which is precisely the message of the laws of thought. Therefore, those who accuse us of circularity or infinity are doing worse than being circular or infinite: they are appealing to what they seek to oppose; they are being self-contradictory, as well as arbitrary!

It is our faculty of logical insight or rationality that teaches us to beware of arbitrary propositions, which are sometimes given an illusion of proof through circular or infinite arguments. One cannot deny this very faculty of logical insight by claiming that it can only be proven by circular or infinite arguments. This would turn it against itself, using it to justify its own denial. It would constitute another fallacy – that of "concept stealing".

The proposition "if P, then P" is not circular or infinite – it is true of all propositions. Such a proposition does not "prove" the truth of P, but merely acknowledges P as a claim that may turn out to be true or false. If one proposes "if P, then P" as a proof of P, one is then of course engaged in circularity or infinite regression; but otherwise no logical sin is involved in affirming it. On the other hand, the paradoxical proposition "if P, then not P" does imply P to be false. To affirm P as true in such case *is* a logical sin, for P is definitely implied *false* by it.

The laws of thought are not circular or infinite – they are just consistent with themselves. It is their opponents who are engaged in fallacy – the failure to think reflexively, and realize the implications of what they are saying on what they are saying. To deny *all* claims to knowledge is to deny *that* very claim too – it is to be self-inconsistent. One logically must look back and check out whether one is self-consistent; that is not circularity, but wise reflection.

The laws of thought are not based on any particular argument, but the very basis of all reasoning processes. This is not an arbitrary starting point; it is an insight based on observation of all reasoning acts, an admission of what evidently carries conviction for us all. These laws cannot be disregarded or discarded, simply because they are so universal. That these laws do not lead to any paradox adds to their force of conviction; but that too is just an application of their universality. They encapsulate what we naturally find convincing in practice, provided we are not seeking dishonestly to pretend otherwise in theory.

The laws of thought may be viewed as specific laws of nature: they express the nature of rational thought, i.e. of logical discourse. By logic is here meant simply a mass of experiences – namely, all the 'events having the form expressed by the laws of thought'. That is, logic refers to the concrete occurrences underlying the abstractions that we name 'laws of thought'.

This is a primary given for which no further reason is necessary. It is not arbitrary, for it is the source of all conviction. To ask for a further reason is to ask for a source of conviction other than the only natural source of conviction! It is to demand the impossible, without reason and against all reason. It is stupid and unfair.

If one examines the motives of critics of the laws of thought, one often finds an immature and irrational yearning for absolutes. They seek a shortcut to omniscience, a magic formula of some sort, and think the laws of thought are obstacles to this pipedream, and so they abandon these laws and seek truth by less restrictive means.

Our ordinary knowledge is very pedestrian: it progresses step by step; it advances painstakingly by trial and error; it is rarely quite sure, and certainly never total and final. This relativity of common knowledge unsettles and displeases some people. To them, such inductive efforts are worthless – knowledge that is not omniscient is not good enough; it is as bad as no knowledge at all. Thus, they reject reason. This is an unhealthy attitude, a failure of 'realism'.

Let's face it squarely: our knowledge as a whole has no finality till everything about everything is known. And how, by what sign, would we know we know everything? Ask yourself that. There is no conceivable such sign. Our knowledge is necessarily contextual; it depends on how much we have experienced and how well we have processed the data. There is no end to it.

Even so, at any given stage of the proceedings, one body of knowledge can conceivably be considered *better* than another, given experience and reasoning so far. *To be better does not necessarily mean to be the best – but it is still better than to be worse or equal.* That is a realistic posture, and a source of sufficient security and satisfaction.

A phenomenological approach to the problem of knowledge is necessary, to avoid erroneous views. It starts with mere *appearance*, whether of seemingly material or mental phenomena (bodies and ideas), or of spiritual intuitions (of self, and its cognitions, volitions and valuations)[170]. The contents of one's consciousness are, *ab initio*, appearances; this is a neutral characterization of what we are conscious of, the raw data and starting point of knowledge. Our first cognitive task is to acknowledge these appearances, as apparent and just as they appear, coolly observing them without interference or comment before any further ado.

It is equally naïve to assume as primary given(s) matter, or mind, or spirit; what is certainly given in experience is the appearance of these things. Much logical work is required before we can, *ad terminatio*, establish with reasonable certainty the final status of these appearances as matter, mind or spirit. We may indeed to begin with assume all such appearances to be real; but in some specific cases, due to the discovery of contradictions between appearances or to insufficiencies in our theories about them, we will have to admit we were wrong, and that certain appearances are illusory.

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[170] Note well that I do not posit perception itself as the starting point of knowledge, as some do. Perception is a relational concept – it is perception of something by someone. Before we become aware of our perceptual ability, we have to exercise it – i.e. we perceive something (other than the perceiving itself). The empirical basis of our concept of perception is our common experience of sensory and mental phenomenal content. When you and I were young children, we were perceiving such phenomena – only later when we became older did we form a concept of perception. Therefore perception as such cannot be taken as a primary in the order of things.

There is an order of things in the development of knowledge that must be respected. Everything beyond appearances is 'theory' – which does not mean that it is necessarily false, only that it must be considered more critically. Theory involves the rational faculty in one way or another. What is theory needs to be sorted out, organized, kept consistent, made as complete as possible. This is where the laws of thought are essential. But these laws cannot make miracles; they can only help us (with the aid of our intelligence and imaginative faculty) formulate and select the best theory in the present context of knowledge.[171]

Human knowledge is thus essentially inductive and probabilistic, depending on the scope and quality of experience, and then on successive generalizations and particularizations, or on competing larger hypotheses requiring ongoing comparative confirmation or refutation. The laws of thought are involved at all stages of this process, regulating our judgments to minimize its chances of error.

[171] Note well: the laws of thought cannot by themselves immediately tell you whether what you have apparently perceived is true or false – but what they can tell you is that you should notice well what you did perceive (its configuration, the phenomenal modalities, i.e. the sights, sounds, etc., apparent times, places, and so forth). Similarly for introspective data of intuition. The question of truth and falsehood for any single item of experience can only be solved progressively, by holistic consideration of all other experiential items, as well as by logical considerations (including consistency and completeness). This is the inductive process.

3. The ontological status of the laws

Discussion of the laws of thought inevitably arrives at the question: are these ontological or epistemological laws, or both; and if both in what sequence? Furthermore, what is their own ontological status – i.e. where do they 'reside', as it were? Are they 'out there' somehow, or only 'in our minds'?

As my thought on the issue has evolved over the years[172], I am now convinced that the traditional term "laws of thought" is accurate, in that these statements are primarily *imperatives* to us humans on how to think about reality, i.e. how to ensure that we cognitively treat the givens of appearance correctly, so that our ideas remain reasonably credible possible expressions of reality and do not degenerate into delusions.

Why? Because Nature can only posit; and so 'negating' depends on Man. That is to say, the world process is always positive; negation involves a particular relation between a conscious being and that presentation. For negation to occur, a conscious being has to project and look for something positive and fail to find it; otherwise, all that occurs is positive.

Thus, when we state the laws of non-contradiction and of the excluded middle, formally as "X and not X cannot both be true" and "X and not X cannot both be untrue", we mean that such *claims* (i.e. 'both true' or 'both untrue') cannot reasonably be made within discourse. We mean that 'X and not-X', respectively 'not-X and not-not-X', cannot correctly be claimed as known or even as reasonably opined.

Conjunctions of (positive or negative) contradictories are thus *outside the bounds of logically acceptable discourse*. These two laws of thought together and inseparably effectively *define* what we naturally mean by negation. Note well, 'middles' between contradictories are as unthinkable as coexisting contradictories.

Note that the law of identity is also tacitly involved in such definition of negation, since before we can understand the logical act of negating, we must grasp the fact of positive presence. So, it is not just the second and third laws that define negation, but strictly speaking also the first.

Such definition is, needless to say, not arbitrary or hypothetical. Were someone to propose some other definition of negation (e.g. using the law of non-contradiction alone, or some other statement altogether), this would only produce an equivocation – the natural definition with reference to the three laws of thought would still be necessary and intended below the surface of all discourse, however willfully suppressed.

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172 See especially my *Ruminations*, chapter 9 ("About Negation").

From this it follows, *by an extrapolation* from logically legitimate thought to reality beyond thought, that these laws of thought (or, identically, of logic – 'logic' meaning 'discourse' by a thinker) are also necessarily laws of reality.

Words are symbols, and symbols can be made to do what one wills, because they are per se not in fact subject to the laws of thought. That is to say, mental gymnastics like placing the symbol X next to the symbol not-X are indeed feasible, but that does not mean that the things the symbols symbolize can equally well be conjoined.

To *label* an observed illusion or a deliberate fantasy as 'real' does not make it in fact real. We can easily *verbally imagine* a 'reality' with non-identity, contradictions and inclusions of the middle, but we cannot *actually conjure* one.

As for the status of the laws of thought themselves: being products of reason, their existence depends on that of a conscious – indeed, rational – subject. All particular acts of reasoning – such as negation, abstraction, measurement, classification, predication, generalization, etc. – depend for their existence on some such rational subject (e.g. a man).

Take away all such subjects from the universe, and only *positive particular* things or events will remain. Without an act of negation, no mixing of or intermediate between contradictories occurs in thought; all the more so, they cannot occur outside thought. Similarly, with regard to abstraction and other acts of the reasoning subject.

Concepts like similarity, difference, uniformity, variety, continuity, change, harmony, contradiction, and principles like the laws of thought, being all outcomes of such ratiocinative acts, are similarly dependent for their existence on there being some appropriately conscious subject(s).

These concepts and principles are, we might say, inherent in the world in the way of a potential; but without the involvement of such a subject, that potential can never be actualized.

These concepts and principles depend *for their existence* on there being conscious subjects to form them – but their *truth or falsehood* is not a function of these subjects. Their occurrence is dependent, but the accuracy of their content when they occur is a different issue. It is not subjective and relative, but on the contrary objective and absolute.

It is important not to draw the wrong inference from the said existential dependence, and to think it implies some sort of relativism and subjectivism (in the most pejorative senses of those terms) as regards issues of truth and falsehood.

No: the 'reasonableness' of our basic concepts and principles is the guarantee of their truth. To suggest some other standard of judgment, or the equivalence of all standards of judgment, is to tacitly claim such other standard(s) to be somehow 'reasonable'. A contradiction is involved in such an attitude. Of course, you are free to propose and accept contradictions, but you will have to pay the cognitive and other consequences. As for me, I prefer to stand by and rely on what is evidently reasonable.

4. Fuzzy logic

In some cases, X and notX are considered not to be contradictory, because the term or proposition X is too *vague*. If precisely what things X refers to is unclear, or if the exact boundaries of some individual thing labeled X are uncertain, then obviously the same can be said for the negative complement 'not X' (see diagram further on). In such cases, the terms or propositions involved are simply problematic.[173]

It is easy to see how such realization can lead to a general critique of the human rational act of naming, and to a philosophy of Nominalism. For, if we observe our concepts carefully, we must admit that they are always in process – they are never fully formed, never finalized. Our ordinary knowledge is predominantly *notional*, tending towards precise conception but never quite attaining it. Thus, the meaning of words (or even of wordless intentions) is in flux – it is becoming rather than being.

This is not a merely epistemological critique, but one that has ontological significance. What is being said here is that things, the objects of our consciousness (be they objective or subjective) are difficult, if not impossible, to precisely pin down and delimit. This is true of concrete individuals and of abstract classes. It is true of matter (e.g. where does the body of a man end: if I breathe air in or out, or swallow water or spit it out, at what stage does the matter entering or exiting become or cease to be part of 'my body'?), and it is true of mind and of soul (who knows where their respective limits are?).

Ultimately, we realize, everything is one continuum, and the divisions we assume between things or classes are ratiocinative and intellectual interpositions. We cannot even truly *imagine* a fine line, a separation devoid of thickness, so how can we claim to *even mentally* precisely separate one thing from another? All the more so in the physical realm, such division is impossible, given that all is composed of continuous and endless fields.

Another critical tack consists of saying that all our experience (and consequently all our conceptual knowledge) is illusory, in the way that a dream is illusory (compared to awake experience). In a dream world, X and not X *can* apparently both coexist without infringing the law of non-contradiction. Distinctions disappear; opposites fuse into each other.

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173 Note also that in some cases we face a range of things, or different degrees of something, and we erroneously call the extremes X and notX – whereas in fact if X is used for one extreme, then notX must refer to all other degrees; and vice versa, if notX is used for one extreme, then X must refer to all other degrees; otherwise, we would be left with some intermediate referents without name (i.e. as neither X nor notX). It also happens that X and notX are made to overlap in our thinking, so that X and notX are made to seem compatible. These are simply common errors of concept formation; they do not justify any denial of the laws of thought.

But this is only superficially critical of our ordinary knowledge. For what is said to coexist here are 'the appearance of X' and 'the appearance of not X' – and not 'X' and 'not X' themselves. We have symbols, or stand-ins, or effects, instead of the objects themselves. So, this is nothing that puts the law in doubt, but rather a viewpoint that by its own terminology (reference to illusion) confirms adherence in principle to that law.

Such reflections lead us to the idea of fuzzy logic, as opposed to definite logic. The difference is illustrated in the following diagram:

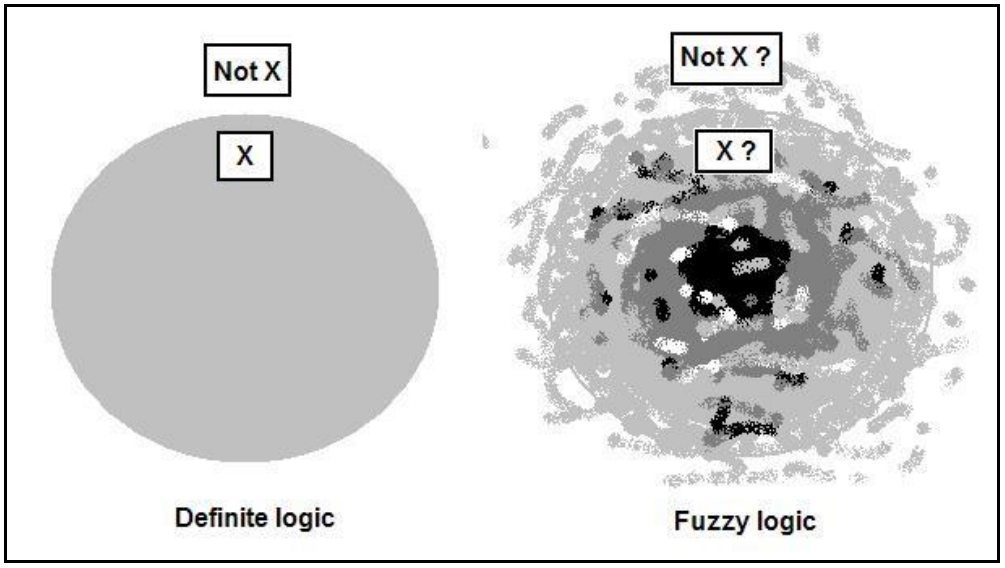

Figure 2 Definite and indefinite terminology.

Aristotle's three laws of thought are aimed at a "definite logic" model – in this model, terms and theses are in principle *clearly* definable and knowable; or at least, this is the assumption in most cases, though in a minority of cases there might be some measure of temporary vagueness and doubt. But this ideal is in practice rarely met, and we should rather refer to a "fuzzy logic" model – wherein the assumption in most cases is that limits are chronically unclear and hard to establish with certainty, though exceptions to this rule must be acknowledged for the sake of consistency.

Ordinarily, our reason functions in a self-confident manner, from conviction to conviction, unfazed by the changes in our 'utter convictions' that in fact occur over time. In other words, we lay the stress on what we (think we) know, and minimize what we consider still unknown or the errors we made in the past. This is the approach of definite logic, an essentially 'deductive' approach. The idea of a fuzzy logic is that we ought to, on the contrary, at the outset acknowledge our cognitive limitations and the ongoing flux of knowing, and opt more thoroughly for an 'inductive' approach.

According to this view, the logical perfection presupposed by Aristotle is largely mythical. Our concepts, propositions and arguments are, in practice, usually exploratory, tentative, approximating, open-ended with regard to referents, open to change, of uncertain pertinence and truth, and so forth. Our rational faculty works by trial and error, constantly trying out

different overlays that might fit a momentarily glimpsed reality, then noticing an apparent mismatch trying out some more adjusted overlay, and so on without end.

Things are rarely quite the way we think of them, and yet our thought of them is not entirely wrong. Hence, we might well say that it is not correct to say that the referents of X fit exactly what we mean by 'X'; and it is not correct to say that they do not all or wholly fit in. Hence, it might be said that certain things are both X and not X, and neither X nor not X – without really intending to imply any contradiction, but only in the way of a reminder to ourselves that we are functioning in shifting sands.

Such a logical posture does not really constitute a denial of the laws of thought. They continue to help us make sense of things. Their precision helps us sort out the vagueness and uncertainty we actually face in practice. They give us an ontological and epistemological ideal we can tend to, even if we can never hope to fully and permanently match it.

In the light of the aforementioned difficulties, some logicians and philosophers are tempted to give up on all rational knowledge, and more specifically the laws of thought. However – and this is the point I am trying to make here – this would be a tragic error. The error here is to think that we humans can navigate within the sea of phenomena and intuitions without the guiding star of the laws of thought. Even if in particular cases these laws are often hard to *apply* decisively, they help us do our best to make sense of the world of appearances we face.

We have to stick with logic. It provides us with a minimum of firm ground in the midst of the shifting sands of experience and conception. Even if it is only an ideal, a theoretical norm, its importance is crucial. Without logic, we have no way to sort out changing impressions and deal with the practical challenges of our existence. Is that not the very definition of madness, insanity?

Nevertheless, sticking to logic should not be taken to signify rigid conventionality, or fearful closed-mindedness, or similar excesses of 'rationalism'. Sticking to logic does not exclude enlightened consciousness, flowing with the current of life, having faith, and similar liberating attitudes. Logic is a tool, not an end in itself. To give up a useful tool is stupid; but it is also stupid not to know when to put down the tool.

There is a stage in the life of the spirit when logical ifs and buts become irrelevant, or even disturbing, and it is wise to just be.

5. Misrepresentation of Aristotle

Aristotle's three laws of thought are often misrepresented, in the service of some doctrine or other. Often, nowadays, the motive is a desire to defend Buddhist antinomies; some decades ago, the motive might have been to defend Marxist contradictions; before that, maybe Hegelian ones. Usually, the proposed reading of Aristotle is unfair to him, a misrepresentation of his evident intentions.

During the late Middle Ages in Europe, the authority of Aristotelian philosophy was unmatched. The reason for this was that before that period many of the works of Aristotle (384-322 BCE) had been mostly lost to Christian Europe; when they were rediscovered, the superiority in many respects of the knowledge they contained was such that his influence became great[174]. But, as a result of that overwhelming belief in everything Aristotelian, scientists of the Renaissance period and after often had to struggle hard to overcome what had become an academic bias.

It could be argued, paradoxically, that Aristotle's influence on the Christian European mind was one of the factors that led to the intellectual Renaissance; nevertheless, just as students must rebel from teachers to some extent to innovate and advance, an anti-Aristotelian reaction had to occur. Many historians thus regard Aristotelianism as the impetus of the Renaissance and thus of modern science.

Note moreover, Aristotle himself was no rigid ideologue; his approach was open-minded and adaptive, what we now call 'scientific'. Although many of his material opinions[175] have turned out to be false, they were quite reasonable for his period of history – and for the Middle Ages. Had he still been around in the modern era, he would no doubt have adjusted his views.

Opposition to Aristotelianism, ranged over the special sciences, more philosophical issues and logical aspects, in no particular order. With regard to his logical work, the greater emphasis Francis Bacon put on induction was indeed a marked improvement; whereas, attempts in the late 19th and early 20th centuries to supersede Aristotle's formal logic with more systematic deductive approaches seem (to me at least) rather pretentious. The attempts, lately, to belittle or do away with Aristotle's laws of thought fall in the same category (again, in my opinion).

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[174] The rediscovery occurred mostly by way of translation into Latin (from Arabic, sometimes via Hebrew) of Greek classical texts in the libraries of Moslem Spain. These included works by Aristotle on physics, metaphysics and ethics. Aristotle's thought was also made known to the West indirectly through commentators like Avicenna (Persia, 11th century) and Averroes (Muslim Spain, 12th century). His influence reached its peak perhaps with the writings of Thomas Aquinas (Italy, 13th century).

[175] For example, his cosmological views, which led to the Ptolemaic model that Copernicus and Galileo had to overcome.

In many cases, criticisms of Aristotle's thought were and are of course justified. But in many cases, too, the critics were and are just (I suspect) seeking a shortcut to academic notoriety, taking an easy ride on the ongoing wave (in some quarters) of 'Aristotle bashing'. It is very easy to be critical regarding someone who cannot answer back; I daresay, if that genius were still around, they would not dare.

A case in point (taken at random) is the following presentation, drawn from an Internet site[176]. I quote:

> *The three laws of "formal logic" which Aristotle set down in his Posterior Analytics are as follows: (1) Law of Identity: Each existence is identical with itself; (2) Law of Non-contradiction: Each existence is not different from itself; (3) Law of Excluded Middle: No existence can be both itself and different from itself.*

Of course, nowhere in the *Posterior Analytics*, or anywhere else in Aristotle's known writings, are such inane formulations of his laws of thought to be found. Anyone who has read Aristotle knows this is not his language or terminology, nor his thought or intent. He does not speak of "existences" and is not concerned with whether or not they are "identical with" or "different from" themselves.

These statements are, admittedly, not presented as verbatim quotations; but they are not, either, declared to be mere readings or interpretations; they are made to seem like loyal paraphrases. But they are not a fair statement of what Aristotelian logic is about. It is not about tautology or the lack of it, not even in an ontological sense.

In Aristotle's *Posterior Analytics*, we find the following statements of the law of non-contradiction: "it is impossible to affirm and deny simultaneously the same predicate of the same subject", and of the law of the excluded middle: "every predicate can be either truly affirmed or truly denied of every subject".[177]

But the above author seems rather to base his formulations on common statements of the laws of thought, like "A is A", "A cannot be not-A" and "Either A or not-A"[178]. Such statements, however, are not meant as comprehensive expressions, but as shorthand formulas; they are more like titles, stand-ins for fuller statements that comprise all that can be said about these laws. The simplest way to read them is as follows:

1. Something that is evidently A must be admitted to be A.
2. Something admitted to be A cannot also be claimed not to be A (i.e. no thing can be claimed both to be A and not to be A).
3. And no thing can be claimed neither to be A nor not to be A.

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[176] *History and Theory of Psychology Course*, by Paul F. Ballantyne, Ph.D. "Aristotelian and Dialectical Logic", in posted May 2003 at http://www.comnet.ca/~pballan//section1(210).htm. (I was recently pointed to this website by a Buddhist correspondent arguing against Aristotelian logic; that is how I came across it.)

[177] Both these statements are there (in Book 11) referred to as laws, and the latter is specifically called the law of the excluded middle. Translation by G. R. G. Mure. See http://graduate.gradsch.uga.edu/archive/Aristotle/Posterior_Analytics_(analytic).txt.

[178] Or at least the first two; for the third law he misconceives altogether. See further on.

In this primary reading, note well, the term "A" is everywhere a predicate, as Aristotle presents it, rather than a subject, as it may seem. In all three cases, the tacit subject of the proposition is "some thing", an individual thing under consideration, i.e. any apparent object of cognition. Moreover, all three propositions are primarily logical or epistemological statements, rather than ontological ones. They tell us *how to behave* in our discourse or cognition.

In a second phase, we can give "A" the role of subject that it superficially has in the expressions "A is A" and "A cannot be not-A", and "Either A or not-A". Such perspective suggests a more ontological reading of these laws, namely that every existent has a particular identity, i.e. 'a nature', whatever that happen to be.

Each thing is something specific (say "A"), not just anything whatsoever ("both A and not A"), nor nothing at all ("neither A nor not A"). It includes some distinguishable aspects and excludes others: it is not infinitely elastic in appearance. It neither includes nor excludes everything. It cannot include things incompatible with it ("contradictions" of it). Its negation may replace it, but nothing in between (no "middle") can replace both it and its negation.

> Note this: the law of the excluded middle could, in analogy to the law of non-contradiction, equally well be called the law of non-neutrality. These laws respectively tell us that there is *no common ground and no neutral ground* between A and not-A. They ontologically together firmly separate A and not-A, allowing of no wishy-washy togetherness or further possibility. They do not however epistemologically exclude that we might (occasionally, though not invariably) come across contradiction or uncertainty in our thinking.

Even such interpretations ought not, in any event, be treated as the whole of the meaning of the laws of thought, but more modestly as a beginning of explication[179]. They make clear, anyway, that these laws are not about equation or non-equation of things or symbols with themselves, as the already mentioned author's formulations misleadingly suggest.

Additionally, the wording he proposes for the law of the excluded middle "No existence can be *both* itself *and* different from itself" – is *formally* wrong. This could be construed as a statement of the law of non-contradiction, perhaps, but the law of the excluded middle would (using the same sort of language) have to be stated as "No existence can be *neither* itself *nor* different from itself".[180]

Clearly, Aristotle's concern was whether the ideas we form about the world are compatible with experiential data and with each other. That is, one might say, an interest in the intersection between appearance and belief, or seeming reality and alleged knowledge. The

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[179] Many more issues arise in them, such as: what do we mean by predicating "A" of something? What is the relation between a label like "A" and what it intends? At what stage may we consider "A" the exclusive label of that thing? Further: so far, the laws have been expressed in terms of an individual thing; but what about their application to kinds of things? Clearly, these laws of thought are pregnant with the whole philosophical enterprise!

[180] Such a glaring formal misstatement of the law discussed tells us much about the critic's logical awareness, or lack of it! When I advised him by e-mail of this formal error, his response was at first flippant, then he made a small show of open-mindedness, but finally he made no effort to correct his statement. (N.B. I have just recently looked again at his website and found out that he now seems to his credit to have corrected this and other errors.)

two components of consistency with experience and other ideas correspond roughly to the tasks of inductive and deductive logic, respectively.

Elsewhere on the same website[181], the said author apparently advocates, in lieu of his pseudo-Aristotelian laws, something called "materialist dialectics," which "holds that the basic rules of correct thinking should reflect a universe not in which the static and changeless is at the core but in which change is at the core." He goes on to propose three questionable alternative "laws", which place change at the center of things.

Thus, the above quoted debatable presentation of the laws of thought is used to convey the idea that Aristotle had a static view of existence, and to propose instead a more dynamic alternative set of laws. It is tendentious rewriting of history.[182]

In truth, Aristotle is *throughout his work very much concerned* with dynamic becoming as well as with static being. His laws of thought are precisely intended to help the intellect cope with variety and change, and remain lucid and poised in the midst of the cacophony of sense-impressions and ideas.

Consider, for instance the following statement drawn from his Metaphysics[183]:

> *For a principle which every one must have who understands anything that is, is not a hypothesis; and that which every one must know who knows anything, he must already have when he comes to a special study. Evidently then such a principle is the most certain of all; which principle this is, let us proceed to say. It is, that the same attribute cannot at the same time belong and not belong to the same subject and in the same respect.*

With characteristic intellectual accuracy, Aristotle expresses the law of non-contradiction by saying that nothing (i.e. no subject of a true proposition) can both be and not-be the same thing (i.e. have and not have the same predicate) *in the same respect at the same time*.

These last words are crucial to his statement, yet often ignored by dishonest critics such as the above quoted. By these words, Aristotle implied that something may well be subject to both a predicate and its negation – in different respects at the same time, or in the same respect at different times, or in different respects at different times.[184]

He is not ignoring that a given thing may have a variety of aspects at once, or that it may change in various ways over time. He is simply reminding us that *in a given location and time of its being*, a thing cannot contradict itself. His intent is therefore clearly not an attempt to

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[181] In http://www.comnet.ca/~pballan/logic2.htm. He there quotes statements like "What Aristotle sees as the most basic characteristic of existence is static self-identity" by J. Somerville, p. 45 in "The Nature of Reality: Dialectical Materialism", in *The Philosophy of Marxism: An Exposition.* (Minneapolis: Marxist Educational Press, 1967/1983).

[182] For an understanding of **the logic of change** in formal terms, see in my works: *Future Logic*, chapter 17, and *Volition and Allied Causal Concepts*, chapter 14. See also, *Buddhist Illogic*, chapter 6.

[183] Book 4, Part 3. (Translated by W. D. Ross.) Posted in the Internet Classics website at http://classics.mit.edu/Aristotle/metaphysics.4.iv.html

[184] Grass can be green and yellow, but not in exactly the same places and times of its existence. Grass can mean what the cows eat or what the hippies smoke, but these two same words do not refer to the same things. If such differences of perspective are impulsively or dogmatically ignored - well, that does not prove that contradictions exist. To affirm contradiction is to lack depth.

deny the existence of variety and change, but to affirm the consistency that things *nevertheless* display at any given place and time.

Evidently, the earlier quoted attempted reformulation of the laws of thought as "Each existence is identical with itself; not different from itself; and can[not] be both itself and different from itself" is not only an inaccurate rendition of Aristotle, but an extremely superficial one[185].

Aristotle should be given the credit, respect and gratitude due him for a timeless and irreplaceable achievement.

[185] Due no doubt to the influence of dimwitted modern symbolic logic, which makes every effort to reduce and limit these complex laws to their simplest possible expression, thus concealing most of their philosophical riches and depth. Why do they wish to so simplify? *In order to fit* logic into their simplistic "formal languages", designed by people (like Gottlob Frege) with hopelessly bureaucratic minds, who think that standardizing thought processes makes them more "scientific". But science is not a deductive, Cartesian enterprise; it is an inductive, evolutionary process. They claim to go above common 'intuition'; but actually, all they do is permanently impose *their own* insights, and thereby inhibit future insights in the field. Development of the science of logic depends on alertness and flexibility, rather than on institutionalization and rigidity.

6. Not on the geometrical model

Since (or insofar as) the "geometrical model" of theory justification involves arbitrary axioms, it is ultimately conventional. If the first principles ("axioms") of a body of alleged knowledge cannot apparently be justified by experience, but have to be based on mere speculation ("arbitrary"), such principles must be admitted to be without proof ("conventional"). If the axioms are unproven, then logically so are all claims based on them.

This is freely admitted in the case of geometry (where for instance Euclid's fifth postulate may be replaced by alternative assumptions), and similarly in other mathematical disciplines. Here, the apparent conventionality of certain axioms gives rise to the possibility of alternative systems, all of which might eventually be found useful in specific empirical contexts. But such a liberal attitude is impossible with regard to the science of Logic.

If we accept the geometrical model for Logic, then Wittgenstein's claim that "The propositions of logic are tautologies… [and] therefore say nothing"[186] is made to seem true. But if we follow him, and admit that logic is meaningless babbling, then we must regard his own statement as meaningless – for, surely, it is itself intended as a "proposition of logic", indeed as the highest principle of meta-logic! Granting that, it is as if he has said nothing, and we can well ignore him and move on.

Similarly, some critics have accused Aristotle of 'begging the question' in his defense[187] of the laws of non-contradiction and of the excluded middle, i.e. of arguing in a circular manner using the intended conclusion(s) as premise(s). Here again, we can more reflexively ask: does that mean that the fallaciousness of such *petitio principii* is an incontrovertible axiom of logic? If the speaker is convinced by this rational principle as an irreducible primary, why not also – or even more so – by the second and third laws of thought? Can he justify his antipathy to circularity without committing circularity?

If Logic is not solidly anchored in reality through some more rigorous process of validation, then *all* knowledge is put in doubt and thus effectively invalidated. If all knowledge is without validity, then even this very claim to invalidity is without validity. The latter insight implies that this skeptical claim is itself invalid, like all others, note well. Therefore, since this skeptical claim is paradoxical, i.e. self-denying, the opposite claim (which is not inherently paradoxical) must be admitted as necessarily true. That is to say, we must admit that Logic has undeniable validity. Only given this minimal admission, does it become possible to admit anything else as true or false.

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186 In *Tractatus*, 6 (quoted in A Dictionary of Philosophy).

187 For instance, in Chapter IV of his *Metaphysics*, Gamma.

I have said all this before again and again, but must keep repeating it in view of the ubiquity of statements I encounter these days in debates to the effect that Aristotle's three Laws of Thought are mere conventions. To make such a statement is to imply one has some privileged knowledge of reality – and yet at the same time to explicitly suggest no such knowledge is even conceivable. Thus, any such statement is self-contradictory, and those who utter it are either fools or knaves, kidding themselves and/or others.

The said laws of thought must not be viewed as axioms of knowledge within a geometrical model. The very idea of such a model is itself an offshoot of Aristotle's logic – notably his first-figure syllogism, where a broad principle or general proposition (the major premise) is used to derive a narrower principle or particular proposition (the conclusion). It follows that such a model cannot be used to justify Logic, for in such case we would be reasoning in circles and obviously failing to anchor our truths in reality.

The only way out of this quandary is to notice and understand the inductive nature of all knowledge, including deductive knowledge. The *ground* of all knowledge is experience, i.e. knowledge of appearances (material, mental and spiritual appearances of all sorts). Without cognition of such data, without some sort of given data whatever its ultimate status (as reality or illusion), no knowledge true or false even arises.

There is no such thing as "purely theoretical" knowledge: at best, that would consist of words without content; but upon reflection, to speak even of words would be to admit them as experienced phenomena. To attempt to refer, instead, to wordless intentions does not resolve the paradox, either – for intentions that do not intend anything are not. There has to be some *experiential* basis to any knowledge claim. Whether the knowledge so based is indeed true, or the opposite of it is true, is another issue, to be sorted out next.

Logic comes into play at this stage, when we need to discriminate between true and false *theoretical* knowledge. We are always trying to go beyond appearances – and that is where we can go wrong (which does not mean we cannot sometimes be right). If we stayed at the level of pure appearance – the phenomenological level – we would never be in error. But because we existentially need to surpass that stage, and enter the rational level of consciousness, we are occasionally evidently subject to error.

Moreover, it is very difficult for us to remain at the purely phenomenological level: we seem to be biologically programmed to ratiocinate, conceptualize and argue; so we have little choice but to confront logical issues head on. The principles of Logic, meaning the laws of thought and the specific logical techniques derived from them, are our tools for sorting out what is true and what is false. We do not infer truth from these principles, as if they were axioms containing all truth in advance. Rather, these principles help us to discern truth from falsehood in the mass of appearances. Without some appearance to work with, logic would yield no conclusion – it would not even arise.

The validity of Logic is, thus, itself an inductive truth, not some arbitrary axiom. Logic is credible, because it describes how we actually proceed to distinguish truth from falsehood in knowledge derived from experience. No other logic than the standard logic of the three laws of thought is possible, because any attempt to fancifully propose any other logic inevitably gets judged through standard logic. The three laws of thought are always our ultimate norms of discursive conduct and judgment. They point us to an ideal of knowledge we constantly try to emulate.

This logical compulsion is not some deterministic force that controls our brain or mind. It is based on the very nature of the ratiocination that drives our derivation of abstract knowledge from concrete appearances. The primary act of ratiocination is **negation**: thinking "*not* this" next to the "this" of empirical data. That act is the beginning of all knowledge over and above experience, and in this very act is the secret of the laws of thought, i.e. the explanation as to why they are what they are and not other than they are.

For, whereas the law of identity (A is A) is an acknowledgment of experience as it presents itself, the law of non-contradiction (nothing can be both A and not A) and the law of the excluded middle (nothing can be neither A nor not A) both relate to things as they do *not* present themselves. These two laws define for us what *denial* of A means – they set the standard for our imagination of something *not* presented in experience at the time concerned. Note this well, for no one before has noticed it that clearly.

Negation is the beginning of the "bigbang" of conceptual and argumentative knowledge, the way we pass from mere experience to concepts and principles; and *the only way* to test and ensure that our rational framework remains in reasonable accord with the givens of experience is to apply the laws of thought. Negations are never directly positively experienced: they are only expressions that we have not experienced something we previously imagined possible. There is no bipolarity in concrete existence; bipolarity is a rational construct.[188]

The concept or term 'not X' can be interpreted to mean 'anything except X' (whether X here intends an individual thing or a group of things). To deny the law of non-contradiction is to say that this "except" is not really meant to be exclusive – i.e. that 'not X' can sometimes include 'X' (and similarly, vice versa). Again, to deny the law of the excluded middle is to say that this "anything" is not really meant to be general – i.e. that besides 'X' there might yet be other things excluded from 'not X'. Thus, to deny these laws of thought is to say: "I do not mean what I say; do not take my words seriously; I am willing to lie".

[188] This is made clear if we consider what we mean when we say, for example, neither the dog nor the cat is in the room we are in. The absence of the dog and the absence of the cat look no different to us; what we actually see are the positive phenomena only, i.e. the carpet, the desk, the chairs, etc. We do not see a non-dog and a non-cat, or anything else that "is absent" from this room, as if this is some other kind of "presence". (However, it does not follow that non-dog and non-cat are equivalent concepts – for the cat may be present when the dog is absent and vice versa.)

7. A poisonous brew

Despite its name, the modern theory of knowledge called Intuitionism, developed by L.E.J. Brouwer[189], can be classed as an excessively deductive approach. It was, significantly, originally intended and designed for mathematics, and was thereafter by extrapolation applied to all knowledge[190]. Equating for all intents and purposes the logical modality of proof with that of fact, "Intuitionist logic" rejects the law of the excluded middle (and hence the inference of a positive statement from a double negation).

Arguing that nothing can be claimed to be true if it is not *proved* to be true, Intuitionism claims to accept the law of non-contradiction (since we cannot both prove A and prove not-A), but denies the law of the excluded middle (since we can both fail to prove A and fail to prove not-A). Thus, whereas Aristotle originally formulated these laws with reference to facts (as nothing can be A and not-A, and nothing can be neither A nor not-A), Brouwer focused on proof alone.

Many errors are involved in this change of perspective. For a start, one can refute it on formal grounds: just as we cannot both prove A and prove not-A, we cannot both *dis*prove A (= prove not-A) and *dis*prove not-A (= prove A). The fact that we can be in ignorance of both A and not-A, i.e. uncertain as to which is true and which is false, does not change the fact that A and not-A cannot be both true or, equally, be both false. The two laws are symmetrical and cannot be taken separately.

Note that Aristotle's approach was to set ontological standards that would serve as epistemological guides, whereas Brouwer tried to place epistemology squarely before ontology. The former implicitly allowed for knowledge not at all dependent on rational processes, viz. knowledge from experience, whereas the latter considered all knowledge as dependent on reasoning, i.e. as purely mental construction.

For classical logic, proof is a conflation of empirical givens and conceptual constructs. To anchor concepts in experience involves deductive methods, but the result is always inductive. If we precisely trace the development of our knowledge, we always find ultimate dependence on empirical givens, generalization and adduction. *There is no purely deductive truth*

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189 Holland, 1881-1966.

190 Such extrapolations are unfortunate: since mathematics deals with special classes of concepts (notably numerical and geometrical ones), insights concerning it cannot always be generalized to all other concepts. Inversely, comments concerning logic in general like the ones made here do not exclude the possibility of specific principles for the mathematical field. I am not a mathematician and do not here intend to discuss that subject.

corresponding to the Intuitionist's notion of "proved" knowledge. The Intuitionist's idea of proof is misconceived; it is not proof.

Even an allegedly "purely deductive system" would need to rely on *our experience* of its symbols, axioms and rules. Thus, it cannot logically claim to be purely deductive (or *a priori* or analytic, in Kantian terms), i.e. wholly independent of any experience. Moreover, *our understanding* of the system's significance is crucial. A machine may perform operations we program into it, but these are meaningless without an intelligent human being to consume the results. Brouwer's assumptions are rife with ignored or hidden issues.

Note too that Brouwer effectively regards "proved" and "not proved" to be exhaustive as well as mutually exclusive. This shows that he implicitly mentally relies on the law of the excluded middle (and on double negation), even while explicitly denying it. Certainly, we have to understand him this way – otherwise, if the terms proved and *un*proved (N.B. not to confuse with *dis*proved) allow for a third possibility, his theory loses all its force. That is, something in between proved and not proved (N.B. again, not to confuse with proved not) would have to somehow be taken into consideration and given meaning!

Brouwer's denial of the law of the excluded middle is in effect nothing more than a recognition that some knowledge has to be classed as *problematic*. That was known all along, and we did not need to wait for Mr. Brouwer to realize it. The law of the excluded middle does not exclude the possibility of problemacy, i.e. that humans may sometimes not know for sure whether to class something as A or not-A. On the contrary, the law of the excluded middle is formulated on that very assumption, to tell us that when such problemacy occurs (as it often does), we should *keep looking* for a solution to the problem one way or the other.

The law of non-contradiction is similarly based on human shortcoming, viz. the fact that contradictions do occur occasionally in human knowledge; and its function is similarly to remind us to try and find some resolution to the apparent conflict. Note here the empirical fact that we do sometimes both seem to prove A from one angle and seem to prove not-A from another tack. In other words, if we follow Brouwer's formulation of the law of non-contradiction, that law of thought should also be denied!

The fact of the matter is that what we commonly call proof is something tentative, which may turn out to be wrong. The genius of classical logic is its ability to take even such errors of proof in stride, and lead us to a possible resolution. It is a logic of realism and adaptation, not one of rigid dogmas.

Indeed, if there is anything approaching purely deductive truth in human knowledge, it is the truth of the laws of thought. So much so, that we can say in advance of any theory of knowledge that if it postulates or concludes that any law of thought is untrue – it is the theory that must be doubted and not these laws. Such antinomy is sure proof that the theory is mixed-up in some way (just as when a theory is in disagreement with empirical facts, it is put in doubt by those facts).

In the case of Intuitionism, the confusion involved is a misrepresentation of what constitutes "proof". Only people ignorant of logic are misled by such trickery. Why on earth would we be tempted to accept Brouwer's idea of "proof" in preference to the law of the excluded middle (which this idea denies)? Has he somehow "proved" his idea, or even just made it seem less arbitrary, more credible or more logically powerful than the idea of the law of the excluded

middle? His view of proof is not even "proved" according his own standards – and it is certainly not proved (indeed it is disproved) by true logic.

Consider the implications of denials of the second and third laws of thought on a formal level. To deny the law of non-contradiction only is to wish to logically treat X and not-X as subcontraries instead of as contradictories. To deny the law of the excluded middle only is to wish to logically treat X and not-X as contraries instead of as contradictories. To deny both these laws is to say that there is no such thing as negation. All the while, the proponent of such ideas unselfconsciously affirms some things and denies others.

Reflect and ask yourself. If X and not-X cannot be contradictories, why should they be contraries or subcontraries? On what conceivable basis could we say that incompatibility (as that between X and not-X) is possible, but exhaustiveness is not; or vice versa? And if nothing can be incompatible and nothing can be exhaustive – what might negation refer to? It is clear that all such proposed antinomial discourse is absurd, devoid of any sort of coherence or intelligence. It is just a manipulation of symbols emptied of meaning.

The deeper root of Intuitionist logic is of course *a failure to understand the nature of negation*. What does 'not' mean, really? How do we get to know negative terms, and what do they tell us? How does negation fit in the laws of thought? I will not go far into this very important field here, having already dealt with it in detail in the past[191]; but the following comments need be added.

Another, related weakness of Intuitionist is *ignorance of inductive logic*. As already stated, Brouwer functioned on an essentially deductive plane; he did not sufficiently take induction into consideration when formulating his ideas. In a way, these were an attempt to get beyond deductive logic; but his analysis did not get broad enough.

This can be illustrated with reference to **double negation**. On a deductive plane, negation of negation is equivalent to affirmation. This is an implication and requirement of the laws of thought. However, on an inductive plane, the matter is not so simple, because negation is always a product of generalization or adduction. That is to say, 'not' always means: 'so far, not'; i.e. it is always relative to the current context of knowledge.

What distinguishes deductive from inductive logic is that in the former the premises are taken for granted when drawing the conclusion, whereas in the latter the uncertainty of the premises and therefore of the conclusion are kept in mind. Thus, deductively: 'not not X' means exactly the same as, and is interchangeable with, 'X'; but inductively: the premise 'not not X' tends towards an 'X' conclusion, but does not guarantee it.

Since 'not X' really means 'we have looked for X but not found it so far', it always (with certain notable exceptions) remains somewhat uncertain. On the other hand, a positive, namely 'X' here, can be certain insofar as it can be directly perceived or intuited (and in this context, the experience 'not found' must be considered as a positive, to ensure theoretical consistency).

If 'not X' is always uncertain to some degree, it follows that 'not not X' is *even more* uncertain and cannot be equated in status to the certainty inherent in 'X' (if the latter is experienced, and not merely a conceptual product). Double negation involves two

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[191] In Chapter 9 of my book *Ruminations*. I strongly recommend the reader to read that crucial essay.

generalizations or adductions, and is therefore essentially an abstraction and not a pure experience.

Moreover, the expression 'not (not X)' inductively means 'we have looked for the negation of X and not found it'. But since 'not X' already means 'we have looked for X and not found it', we may reasonably ask the question: is the path of 'not not X' the way to find 'X' in experience? Obviously not! If we seek for X, we would directly look for it– and not indirectly look for it through the negation of its negation.

Note, too, that having found 'X' in experience we would consider 'not not X' to follow with deductive force, even though the reverse relation is (as already mentioned) much weaker.

Thus, the problem of double negation posed by Brouwer is a very artificial one, that has little or nothing to do with actual cognitive practice. Not only are the laws of thought nowhere put in doubt by this problem – if we are careful to distinguish induction from deduction – but it is not a problem that would actually arise in the normal course of thought. It is a modern sophistical teaser.

8. The game of one-upmanship

People who think the law of non-contradiction and/or the law of the excluded middle is/are expendable have simply not sufficiently observed and analyzed the formation of knowledge within themselves. They think it is just a matter of playing with words, and they are free to assert that some things might be "both A and not A" and/or "neither A nor not A". But they do not pay attention to how that judgment arises and is itself judged.

They view "A is A", etc.[192], as verbal statements like any other, and think they can negate such statements like all others, saying "A is not A", etc. But in fact, negation is not possible as a rational act without acceptance of *the significance of negation inherent in the second and third laws of thought*, in comparison to the first law of thought. To say "not" at all meaningfully, I must first accept that "A cannot be not A" and that "there's no third alternative to A and not A".[193]

To try to introduce some other (less demanding) definition of negation is impossible, for true negation would still have to be thought of (in a hidden manner or using other words). Inventing a "many-valued logic" or a "fuzzy logic" cannot to do away with standard two-valued logic – the latter still remains operative, even if without words, on a subconscious level. We have no way to think conceptually without affirmation and denial; we can only pretend to do so.

Many "modern" logicians are so imprisoned by symbolic logic that they have lost contact with the intended meanings of their symbols. For this reason, the symbols 'X' and 'not X' seem equivalent to them, like 'X' and 'Y'. But for classical logicians, a term and its negation have a special relationship. The negation of X refers to *all but* X, i.e. everything that is or might be in the whole universe other than X.[194]

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192 Incidentally, I notice people on the Internet nowadays labeling the three laws of thought (LOT): LOI, LNC and LEM, for brevity's sake. Sure, why not?

193 Some logicians accept the law of non-contradiction as unavoidable, but consider the law of the excluded middle as expendable: this modern notion is quite foolish. *Both* laws are needed and appealed to in both deductive logic and in inductive logic. They do not only serve for validation (e.g. of syllogisms or of factorial inductions), but they generate questions and research (e.g. what does this imply? or what causative relation can be induced from that?). Moreover, they are mirror images of each other, meant to complement each other so as to exhaust all possibilities, and they ultimately imply each other, and both imply and are implied by the law of identity.

194 Note that difference does not imply incompatibility. Two things, say X and Y, may be different, yet compatible – or even imply each other. We are well able to distinguish two things (or characteristics of some thing(s)), even if they always occur in tandem and are never found elsewhere. Their invariable co-incidence does not prevent their having some empirical or intellectual difference that allows and incites us to name them differently, and say that X is not the same thing as Y. In such case, X as such

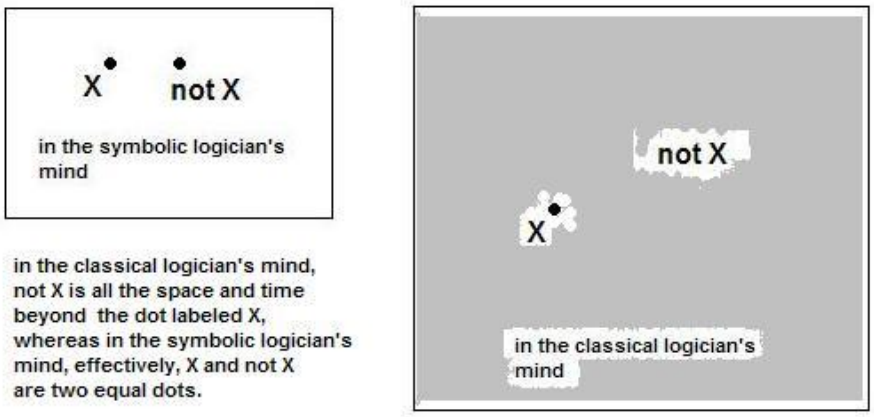

Figure 3 Visualizations of negation.

The diagram above illustrates how differently these people effectively visualize negation:

Obviously, if a person mentally regards 'X' and 'not X' as commensurate, he will not understand why they cannot both be affirmed or both be denied at once; the second and third laws of thought will seem to him prejudicial and conventional. To return to a rational viewpoint, that person has to become conscious of the radical intent of the act of negation; it leaves no space for mixtures or for additional concoctions.

Bipolar logic is not a mere "convention", for the simple reason that making a convention presupposes we have a choice of two or more alternatives, whereas bipolarity is the only way rational thought can at all proceed. We do not arbitrarily agree bipolarity, because it is inherent in the very asking of the question. To claim something to be conventional is already to acknowledge the conflict between it and the negation of it, and the lack of anything intelligible in between the two.

The motive behind the attempts of some thinkers to deny the laws of thought (i.e. the laws of proper affirmation and denial) is simply an ego ambition to "beat the system", or more specifically (in the case of Western philosophers) to surpass Aristotle (the one who first made these laws explicit objects of study). "You say X? I will 'up the ante' and say Not X (etc.) – and thus show I am the greatest!"

This is not mere perversity – but a sort of natural denial instinct gone mad. For, funnily enough, to deny some suggestion (including the suggestion there are three laws of thought) is in the very nature of conceptual knowing, a protective mechanism to make sure all alternative interpretations of fact are taken into consideration. This is precisely the faculty of negation – the very one which gives rise to the need for the laws of thought! The problem here is that it is being turned on itself – it is being over-applied, applied in an absurd way.

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will exclude Y, and not X as such will include Y, even though we can say that X implies Y, and not X implies not Y.

This can go on and on ad infinitum. Suppose I say "A" (meaning "A but not notA"), you answer "not A" (meaning "notA but not A")[195]; I reply "both A and notA", you oppose "neither A nor notA"; what have we said or achieved? Perhaps I will now say: "all of these four alternatives"; and you will reply: "none of these four alternatives". Then I trump you, asserting: "both these last two alternatives" and you answer: "neither of them". And so forth. Whither and what for?

A more complex version of the same game of one-upmanship can be played with reference to the laws of thought:

1. A is A (affirming the law of identity).
2. A is not A (denying the law of identity).
3. Both (1) and (2). A is A, and A is not A. (disregarding the law of non-contradiction).
4. Neither (1) nor (2). A is not A, and A is not not A (disregarding the law of the excluded middle).
5. Both (3) and (4).
6. Neither (3) nor (4).
7. Both (5) and (6).
8. Neither (5) nor (6).
9. And so on and so forth.

Thus for the first law of thought; and similarly for the other two. We do not merely have a choice of four alternatives (the first four in the above list), a so-called 'tetralemma', but an infinite choice of denials of denials of denials… *How would we even evaluate the meaning of all these alternatives without using the laws of thought? They would all be meaningless, because every proposed interpretation would be in turn deniable.*

Thus, the attempt to propose a radically "alternative logic", instead of the standard (Aristotelian) logic, is really *the end of all intelligible logic*, the dissolution of all rationality. It is not a meaningful option but a useless manipulation of meaningless symbols. None of it makes any sense; it is just piling up words to give an optical illusion of depth. People who engage in such moronic games should clearly not be granted the status of "logicians".

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[195] Note that if we start admitting the logical possibility of "A and notA" (or of "not A and not notA"), then we can no longer mention "A" (or "notA") alone, for then it is not clear whether we mean "A with notA" or "A without notA" (etc.). This just goes to show that normally, when we think "A" we mean "*as against* notA" – we do not consider contradictory terms as compatible.

9. In Buddhist discourse

Opposition by some Western logicians to (one or more of) the laws of thought is mostly naïve symbolic games, without any profound epistemological or ontological reflection; of quite another caliber is the opposition to these laws found in some Buddhist literature[196]. But we can, with a bit of effort of reflection, explain away the apparent antinomies in their discourse.

When Buddhist philosophers make statements of the form "not X and not notX", they should not (or not always) be viewed as engaging in antinomy, or in rejection of the laws of thought. Rather, such statements are abridged expressions intending: "don't look for X and don't look for not X", or "don't think X and don't think not X", or "don't say X and don't say not X", or "don't attach to X and don't attach to not X", or the like.[197]

When thus clarified, statements superficially of the form "neither X nor not X" (or similarly, in some cases, "both X and not X") are seen to be quite in accord with logic. For the laws of thought do not deny that you cannot *look for* 'X' and for 'not X', or for that matter for 'both X and not X', or even 'neither X nor not X'. Similarly, with regard to *thinking* this or that, or to *claiming* this or that, or to *attaching* to this or that, etc.

The laws of logic would only say that you cannot at once 'look for X' and '*not* look for X', and so forth. It does not say you cannot at once 'look for X' and 'look for *not* X', and so forth. The latter situation merely asserts that the issue of X or not X ought to be left *problematic*. An unsolved problem is not an antinomy. The most we can say is that whereas Buddhism might be deemed to enjoin us to accept such uncertainty as final, Western logic would recommend pressing on to find a solution of sorts.

Thus, in some cases, the apparent contradictions and inclusions of middle terms in Buddhist philosophy (and similarly in some other texts) are merely verbal. They are due to *inaccuracy in verbal expression*, omitting significant implicit aspects of what is really meant. The reason for such verbal brevity is that the focus of such statements is *heuristic*, rather than *existential*. They are merely meant as "skillful means" (to the end of Realization), not as factual descriptions. That is to say, they are statements telling the subject *how to* proceed (cognitively, volitionally or in valuation), rather than telling him/her how things *are*.

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196 I am of course over-generalizing a bit here, for emphasis. There are of course more savvy Western logicians and less savvy Oriental (including Buddhist) logicians. A case of the latter I have treated in some detail in past works is Nagarjuna.

197 For example, the following is a recommendation to avoid making claims of truth or falsehood: "Neither affirm nor deny… and you are as good as a enlightened already." *Sutra of Supreme Wisdom*, v. 30 – in Jean Eracle (my translation from French).

To give an actual example from Buddhist literature, I quote the following passage from the *Wake-up Sermon* attributed to Bodhidharma:

> "*Mortals keep creating the mind, claiming it exists. And arhats keep negating the mind, claiming it doesn't exist. But bodhisattvas and buddhas neither create nor negate the mind. This is what's meant by the mind that neither exists nor doesn't exist… called the Middle Way.*"[198]

When we face an unresolved contradiction or an unsolved problem of any sort, we are from the point of view of knowledge in front of a void. This 'emptiness' can be looked upon with anxiety, as a precipice, as a deficiency of means to deal with the challenges of life. Or it may be viewed as something pregnant with meaning, a welcome opportunity to dive fearlessly into infinity. The former attitude gives rise to Western science, the latter to Zen meditation.

Or again, consider the following quotation from Huang Po's teaching:

> *"If only you will avoid concepts of existence and non-existence in regard to absolutely everything, you will then perceive the Dharma."* (P. 43.)

Here again, the meaning is clear. The Zen master is not here denying existence or non-existence or both; he is just telling us not to engage in judgments like 'this exists' or 'this does not exist' that are inherent to all conceptualization. He refers to such judgments as "dualism", because they require a decision between two alternatives. Clearly, Huang Po's statement is not a formally contradictory ontological proposition, but a *prima facie* coherent epistemological injunction not to be concerned with judging whether what one experiences is real or unreal.

Admittedly, some Buddhists[199] do take such a statement as implying that existence does not exist, or that it both exists and does not exists, or neither exists nor does not exist. But as far as commonsense logic is concerned, existence does exist – i.e. whatever is, is (Aristotle's law of identity). Any clear denial of this fundamental truth would just be self-contradictory – it would deliberately ignore the fact and implications of its own utterance (i.e. that a statement has been made, alleging a truth, by someone to someone, etc.)

More precisely, in the present context, we must acknowledge that ***whatever but appears, certainly exists*** – whether it is eventually judged to be real or illusory. On this basis, we can reasonably interpret Huang Po (at least in the citation above) as simply saying "do not ask whether some particular (or general) thing exists or not, or whether it is real or not, because such questioning diverts your attention from a much more important insight into the nature of being".

It should be added that, even though I above admit that Huang Po's position is prima facie coherent, it is not so coherent upon further scrutiny. He cannot strictly speaking utter a statement without using concepts and he cannot be understood by us without use of our

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[198] P. 53. This passage is particularly clear in its explanation of "neither exists nor does not" as more precisely "is neither created nor negated". Whereas the former is logically contradictory, the latter is in fact not so. What is advocated here is, simply put, non-interference.

[199] In truth, Huang Po is among them, since elsewhere he piously states: "*from first to last not even the smallest grain of anything perceptible has ever existed or ever will exist*" (p. 127). This is a denial of all appearance, even as such. Of course, such a position is untenable, for the existence of mere appearance is logically undeniable – else, what is he discussing? Before one can at all deny anything, one must be able to affirm something. Also, the act of denial is itself an existent.

conceptual faculty. All discourse is conceptual, even anti-conceptual discourse. That is, in the very act of preaching abstinence from concepts, *he is in fact not practicing what he preaches*.

This shows that even persons presumed to be enlightened need concepts to communicate, and also that such conceptuality does not apparently (judging by the claims of those who practice it) affect their being enlightened. So concepts cannot be intrinsically harmful to enlightenment, and the claim that they must be eschewed is internally inconsistent! This is not a game of words (as some might argue) – it is a logical insight that cannot be waved off. One can only at best argue against excessive conceptualization.

In any event, it must be understood that Buddhist anti-conceptual philosophy is aimed at psychological development: it is primarily a "way" or "path". Its focus is how to react to ordinary experiences, so as to get to see the ultimate reality beyond them. It refers to the object (X or not X), not independently (as in most Western logic), but as an object *of the Subject* (i.e. sought out, thought of, claimed, or attached to by the subject-agent). The latter 'subjectivity' (i.e. dependence on the subject-agent) is very often left implicit, simply because it is so pervasive. Notwithstanding, there are contexts in which the intent is more 'objective' than that[200].

It should also be noticed that many of the contradictions or paradoxes that Buddhist philosophers produce in their discourse are due to their tendency to make apparently general statements that in the last analysis turn out to be less than all-inclusive. Even while believing that there is more to the world as a whole than what is commonly evident, they formulate their ideas about the phenomenal world as *unqualified universal propositions*. There are many examples of this tendency.

"All is unreal", says the *Dhammapada* (v. 279). Calling all unreal or illusory is of course possible *in imagination, i.e. verbally* – by taking the predicate 'unreal' or 'illusory' from its original legitimate subjects of application and applying it to 'all' subjects. Implicit in this manipulation is *an analogy* – i.e. a statement that just as within the realm of appearance some items are found not real and labeled illusory, so we can project a larger realm in which the whole current realm of appearance would seem unreal.

This explains how people assimilate that oft-repeated Buddhist statement, i.e. why it seems thinkable and potentially plausible. But it does not constitute logical justification for it. The only possible justification would be to personally experience a realm beyond that of ordinary experience. Even then, the logically consistent way to make the statement would be "all ordinary experience is unreal" (because saying just "all" would of course logically have to include the extraordinary experience).

Another frequently found example is "existence is suffering[201]." This statement is true, all too true, about the world we commonly experience, i.e. the world of material and mental phenomena. If one is observant, one discerns that we are always feeling some unpleasantness in the background of our existence. No earthly happiness is ever complete, if only because it is

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200 For a start, to claim a means as skillful is a kind of factual description.

201 This is the usual translation of the Sanskrit term is *dukkha*. This connotes not only physical and emotional pain, but more broadly mental deficiencies and disturbances, lack of full satisfaction and contentment, unhappiness, absence of perfect peace of mind.

tenuous. Even sexual pleasure or orgasm – which more and more of my contemporaries seem to regard as the ultimate ecstasy and goal of existence – is a pain of sorts[202].

Buddhism has displayed extreme wisdom in emphasizing the fact of suffering, because once we realize it we are by this very simple realization already well on the way to being freed of suffering. If one were visiting hell, one would not expect to experience heaven there; likewise, it is natural in this halfway world to experience some suffering. I used to suffer a lot at the sight of people getting away with injustices or other ugly acts; but lately I just tell myself: "well, I am in samsara and this is normal behavior in samsara[203] – so long as I am here, I have to expect this kind of unpleasant experience and take it in stride!"

But the statement "existence is suffering" is wrongly formulated from the logical point of view, and for that reason it is bound to lead to paradoxes. For if we believe (as Buddhists do) that suffering can eventually be overcome (specifically, when nirvana is attained), then the truth of suffering must be formulated less universally as: "*mundane* existence is suffering". The usual formulation of the first Noble Truth, "existence is suffering," is not intended to be as all-inclusive as it seems – for suffering disappears according to the third Noble Truth when we become enlightened. Therefore, to make the former consistent with the latter, it has to be rephrased more restrictively.

Another example of the tendency to artificially refuse to count the experience of enlightenment as part of the world as a whole is the idea that enlightenment takes us "beyond good and evil". This is logically incorrect – if we regard enlightenment as the *summum bonum*, the ultimate good (which we do, if we enjoin people to prefer it to all other pursuits).

The phrase "beyond good and bad" is intended to stress the practical problem that pursuing good is as much a form of attachment as avoiding evil. The pursuit of worldly good things is ultimately bad, because it just ties us to this world and subjects us to the bad in it. And indeed, even the pursuit of liberation from this world, i.e. of an otherworldly good, is problematic, in that it involves the wrong attitude, a grasping or clinging attitude that is not conducive to success. All this is true, but tends towards paradox.

To avoid confusion, we must simply rephrase our goal as "beyond *pursuit of* good and avoidance of evil". That is to say, we must admit that nirvana is 'good' in the most accurate sense of the term, while what we call 'good' in the world of samsara (i.e. wealth position, power, sensual pleasure, etc.) is really not much better than what we call 'bad'. Alternatively, we should distinguish good in an absolute sense (the good of nirvana) and good in a relative sense (the goods within samsara). Relative goods would then to be classified as not so good from the absolute point of view.

The result of this change of perspective is that, rather than view existence as fundamentally bad (due to suffering), we may now view it as fundamentally good (since nirvana underlies all samsaric existence). Our common view and manner of existence is just an error of sorts, causing us much suffering; if we but return to correct cognition and behavior, we will

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202 If we are sufficiently attentive, we notice the pain involved in sexual feelings. Not just a pain due to frustration, but a component of physical pain in the very midst of the apparent pleasure.

203 Or, using Jewish terminology: "I am in *galut* (exile, in Hebrew), and such unpleasantness is to be expected here". Note in passing, the close analogy between the Buddhist concept of samsara and the kabbala concept of galut.

experience the natural good at the core of all things. Here, the illusory good and evil of the mundane are irrelevant, and we are fully immersed in the real good.[204]

To conclude – Buddhist discourse often leads to paradox or contradiction because it insists on using terms in conventional ways and uttering generalities that apply to only part of the totality of experience (namely, the mundane part, to the exclusion of the supramundane part). To avoid the doctrinal problems such discursive practices cause, we must either clearly specify the terms used as having such and such conventional senses, or particularize statements that were formulated too generally (i.e. which did not explicitly take into consideration the data of enlightenment).

[204] We could read S. Suzuki as saying much the same thing, when he says: "Because we are not good right now, we want to be better, but when we attain the transcendental mind, we go beyond things as they are and as they should be. In the emptiness of our original mind they are one, and there we find perfect composure" (p.130).

10. Calling what is not a spade a spade

Buddhism, no doubt since its inception, has a mix of logic and illogic in its discourse. Looking at its four main philosophical schools, Abhidharma, Prajnaparamita, Madhyamika and Yogacara, the most prone to discard the three laws of thought (i.e. Identity, Non-contradiction, Exclusion of the middle) was Madhyamika[205]. But this trend was started in the earlier Prajnaparamita, as examples from the *Diamond Sutra*[206] show.

We do, in this sutra, find samples of valid logical argument. For example, there is a well formed a fortiori argument in Section 12[207]: "wherever this sutra or even four lines of it are preached, that place will be respected by all beings… How much more [worthy of respect] the person who can memorize and recite this sutra…!" But we do also find plain antinomies, like "the Dharma… is neither graspable nor elusive" (said even though not graspable means elusive, and not elusive means graspable).

But the *Diamond Sutra* repeatedly uses a form of argument that, as a logician, I would class as a further twist in the panoply of Buddhist illogic. This states: "**What is called X is not in fact X; therefore, it is called X**" (or sometimes: "**What is called X is truly not X; such is merely a name, which is why it is called X**").

There are over twenty samples of this argument in the said sutra. Here is one: "What the Tathagata has called the Prajnaparamita, the highest, transcendental wisdom, is not, in fact, the Prajnaparamita and therefore it is called Prajnaparamita." Here is another: "… what are called beings are truly no beings. Such is merely a name. That is why the Tathagata has spoken of them as beings."[208]

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[205] See my work *Buddhist Illogic* on this topic, as well as comments on Nagarjuna's discourse in my *Ruminations*, Part I, chapter 5. I must stress that my concern, throughout those previous and the present critiques, is not to reject Buddhism as such, but to show that it can be harmonized with reason. I consider quite unnecessary and counterproductive, the attitude of many Buddhist philosophers, who seemingly consider Realization (i.e. enlightenment, liberation, wisdom) impossible without rejection of logic. My guiding principle throughout is that they are quite compatible, and indeed that reason is an essential means (together with morality and meditation) to that desirable end.

[206] Judging by its Sanskrit language, the centrality of the bodhisattva ideal and other emphases in it, this sutra is a Mahayana text. It is thought to have been composed and written in India about 350 C.E., though at least one authority suggests a date perhaps as early as 150 C.E. For comparison, Nagarjuna, the founder of Madhyamika philosophy, was active circa 150-200 C.E.; thus this Prajnaparamita text was written during about the same period, if not much later.

[207] Mu Soeng, p. 111.

[208] In Mu Soeng: pp. 145 and 151, respectively. I spotted a similar argument in another Mahayana text: "And it is because for them [the boddhisattvas] training consists in not-training that they are said to

What I am questioning or contesting here regarding this sort of discourse is only the "*therefore*" or "*which is why*" conjunction[209]. I am not denying that one might call something by an inappropriate name, or even that words can never more than approximate what one really wants to say. But to say that one is naming something X *because* it is not X – this is surely absurd and untenable.

This is not merely 'not calling a spade a spade' – it is calling something a spade even while believing it not to be a spade! This is, at least on the surface, contrary to logic. If the label is not applicable, why apply it? Moreover, why boast about this unconscionable inversion, saying "therefore"?

To say that something "is not in fact or truly X" is to imply that the word X has a sense that the thing under consideration does not fit into; in such case, why call that very thing 'X' against all logic? Why not just call it 'not X' (or coin for it some other, more specific name) and avoid paradox!

Discourse like "such is merely a name" is self-defeating anyway, since in fact it uses names that do convey some meaning. The sentence suggests no words have any valid reference, yet relies on the effectiveness of the words it utilizes to communicate its various intentions. It is a statement that tries to exempt itself from the criticisms it levels at *all* statements as such.

In the examples given above, the argument depends on our understanding of words like 'Prajnaparamita' (i.e. perfection of wisdom) or 'beings' – and yet at the same time tries to invalidate any such understanding. It cannot therefore be said to communicate anything intelligible.

Without doubt, we cannot adequately express ultimate reality (or God) in words. But it remains true that we can verbally express the fact of ineffability (as just done in the preceding sentence). There is no need to devalue words as such to admit that they have their limits.

Moreover, it is very doubtful that such paradoxical statements (like "name this X *because* it is not X") are psychologically expedient to attain enlightenment; they just cognitively confuse and incapacitate the rational mind. Rather than silence the inquiring mind, all they actually do is excite it with subconsciously unanswered questions. Such nonsensical statements are products of an unfortunate fashion that developed in Buddhism at a certain epoch[210].

That sort of intellectual perversity came to seem profound, as it does to some postmodern thinkers in the West today, precisely because a logical antinomy implies nothing – and that emptiness of meaning is (wrongly) equated with the Emptiness underlying all phenomena. The gaping hole in knowledge left by antinomy gives the illusion of being pregnant with meaning, whereas in fact it is just evidence of ignorance. Note this well.

It should be added that there is indeed a sort of structural paradox in the meditative act – but the *Diamond Sutra*'s habit of 'calling not a spade a spade' is not it. The paradox involved is

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be training" (my translation from a French translation) – found in chapter 2, v. 33 of the "Sutra of the words of the Buddha on the Supreme Wisdom" (see Eracle, p. 61).

[209] Assuming the translation in this edition is correct, of course (and it seems quite respectable; see p. ix of the Preface). My point is that no logician has ever formally validated such an argument; and in fact it is formally invalid, since the conclusion effectively contradicts a premise.

[210] Although not entirely absent in the earlier Abhidharma literature and the later Yogacara literature, they are not uncommon in some Prajnaparamita literature (including the *Diamond Sutra*) and rather common in Madhyamika literature.

that if we pursue enlightenment through meditation, we cannot hope to attain it, for then our ego (grasping at this transcendental value as at a worldly object) is sustained; yet, meditation is the best way to enlightenment. So we must 'just do it' – just sit and let our native enlightenment (our 'Buddha nature') shine forth eventually.

It should also be reminded that Buddhism is originally motivated by strong realism. It is essentially a striving towards Reality. In this perspective, the Buddhist notion of "suchness" may be considered as a commitment to the Law of Identity. The enlightened man is one who perceives things, in particular and in general, *such as they really are*.

This is brought out, for instance, in the following Zen exchange. A monk asked Li-shan: "What is the reason [of Bodhidharma's coming from the West, i.e. from India to China]", to which the Zen master replied "Just because things are such as they are", and in D. T. Suzuki's commentary that this refers to "Suchness" (*Zen Doctrine of No-mind*, p. 93).

11. Buddhist causation theory

Whereas skeptics such as Hume considered that *nothing has a cause*, or at least that if anything does cause anything else we cannot know about it – Buddhist philosophy went to the opposite extreme and advocated that *everything is interconnected to everything else*, claiming that this universal truth is knowable through enlightened cognition and not merely through induction.

This philosophy of "interdependence" or "co-dependence" sounds good at first sight, because it implies that none of us is an island unto himself or herself. It is an ethical teaching against selfishness and irresponsibility. We are all part of a complex tapestry of relations, and no one can pride himself or herself on true independence from the rest of us. We should be grateful to each other and lovingly help each other. To put it very idealistically: everyone is an indispensable part of myself.

But on a strictly logical level, this view is difficult to uphold. For, if everything were causally interconnected, then we could not inductively identify causes and effects, because we could never 'remove' or 'add' any cause or effect! We would thus be deprived of one of our main scientific techniques of causal logic.

To identify causality, we need to consider what happens around a phenomenon (say, X) in both its presence and its absence. We need to experiment different situations. But the view that everything is both a cause and an effect of everything implies, for every X, both X and the negation of X to be always causally present, somehow. Universal contradiction seems to be required; that is, all contradictories coexisting and equally active at once.

We might at best say that this thesis implies that nothing has a complete and necessary causal relation to anything else, but all things are causally interrelated in the way of partial and contingent causation. Natural spontaneity and freewill are of course excluded from this thesis; it is essentially deterministic, note. But is it possible to even imagine partial-contingent causation without complete-necessary causation? I don't think so. But supposing it is arguable, there would be no logical way to prove it.

Logically, such claim can only be an arbitrary assumption. It follows that the universal mutual causality claimed by the Buddhist is only knowable, if at all, by purely intuitive means – no scientific proof of it is possible. Furthermore, such universal intuition necessitates (implies) omniscience of all things, everywhere, at all times. And though we project that God has such cognitive power, and the Buddhists consider that a human being can acquire it through enlightenment, omniscience is not something we ordinarily encounter or know how to prove.

In a past work of mine[211], I explain how the Buddhist doctrine of co-dependence must not be taken as nugatory of the law of identity that 'facts are facts'. I want to reiterate it here, because this insight of mine hit the nail on the head with regard to the significance of co-dependence. The advocates of co-dependence explicitly argue for it by means of *diachronic* examples (sunlight causes growth of plant, plant causes feeding of animals, etc), i.e. across time; but subsequently, they tacitly intend it *synchronically*, i.e. in the present tense.

This is the hidden lie of this doctrine: the implication that somehow the present does not firmly and definitely exist, but currently 'depends' on things outside it (i.e. in past or future). In truth: once actual, the present's existence is not in need to any support by anything else; it just is and that's that. Co-dependence implies that even actual present existence is somehow tenuous. Of course, such antinomy is precisely the 'paradoxical' aspect of co-dependence that makes it so emotionally attractive to postmodern readers, and which makes this doctrine quite distinct from any other causal philosophy.

Note well that I am not saying that causation requires change. We can establish causation between static existents – by referring to different instances of a class, i.e. with reference to the extensional mode of causation. The natural mode of causation, on the other hand, implies underlying changes in individuals – even when we express it verbally as a relation of static characters, we mean that the change from presence to absence or vice versa of those characters is involved.

The paradoxical aspect of the co-dependence thesis is its claiming the possibility of causation without differences across space and time, i.e. entirely in the here and now. This is a logically unthinkable and unknowable sort of causation. It should hardly be necessary to say that the present, once present, is a done thing; it can no longer be affected by the present, the past or the future. The past, once past, is gone; it is no longer changeable. The future is the only potentially changeable thing[212].

We can use these logical insights to refute the Buddhists' view of the soul's mode of existence. They consider that the soul has "no real existence" (in itself, as an essence) because of its interdependence with everything else. They argue that the soul has actual past causes of generation (e.g. parents, food, etc.) and possible future causes of destruction (e.g. if the body dies, the soul disappears, say). But in truth, such retrospective and prospective causalities do not change the reality that once the soul is, and so long as it is, its actual present existence is, and it is independently of anything else.

The advocates of this idea, that the soul's existence is unreal, can be seen to profit from confusion between two terms: ontological dependence and epistemological dependence. Certainly, demonstrable past causes are indicative of what they call "dependent origination", but future causes cannot be assimilated by anticipation to the same concept. They might at best be eventually described as instances of "dependent obliteration"! Just because in our present minds the existence of the object (here, the soul) is at the center of a mass of past, present and

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211 *Buddhist Illogic*, chapter 8.

212 And that only if we assume some indeterminism; otherwise, if the future is inevitable, it can hardly be considered as changeable. Certainly, though science fiction fans and some science theorists are wont to imagine time travel, it has not to date been shown empirically possible, and therefore cannot be taken seriously.

future causes, it does not follow that all these items can be indistinguishably considered as present causes.

Nevertheless, it is possible and valuable to view the whole world as one big Ocean, and all things apparently in it as complex waves and swirls of its water, always in flux. This image is often proposed in Buddhist teachings, in seeming justification of the idea of co-dependence, as well as the idea of impermanence and others.

Just as in a large body of water, a sea, a lake, a river, all the waves, though twirling and churning, are inseparable from the whole, so the waves of matter, mind and spirit in the universe, form a continuous whole. The various, changing many are ultimately a harmonious one. All subdivisions of the one in space or time are illusions or artificial projections by some observer. With regard to interdependence, a pressure in any locale of the whole is bound to somewhat affect all other locales.

This image reconciles the apparently conflicting views of the Greek philosophers Heraclitus and Parmenides. Heraclitean philosophy emphasizes appearance, materiality, multiplicity and change: "you cannot step into the same river twice" (or indeed, even once), for by the time you do so, both you and it have changed. In Parmenidean philosophy, the opposite is stressed: "everything is one and the same". At first sight, these views seem contradictory – one is pluralist and relativistic, and the other is monist and absolutist; but using the image of a body of water they can be made compatible and complementary.

Initially, this analogy to water seems to call for a universal underlying substance – an assumed "ether". But, as Einstein has pointed out, since the velocity of light is the same in all directions and displays no Doppler effect, there can be no ether! Thus, all is one and one is nothing! This interesting discovery of modern science seems to confirm the much older Buddhist view that the universal ocean is one of Emptiness (*Shunyata*). Judaism also has this notion of the All as originally Nothingness (*Yesh me-Ayin*).

Be that as it may, we must still consider and deal with the world as it appears – in all its details of variety, change and causality. And this task has to be fulfilled responsibly – i.e. in a credible, empirical and logical manner. Vague, colorful, idealistic pronouncements will not do, however poetic they sound.

Thus, with regard to interdependence, it must be stressed that we can formally show with reference to causative syllogism that the cause of a cause cannot necessarily be regarded as a cause in turn – so the image of a tiny stir in one part of the ocean having an effect on all others is incorrect.[213]

[213] For further discussion of these issues, see my *The Logic of Causation*, especially chapters 10 and 16.

12. A formal logic of change

I have in the past[214], following Aristotle and Darwin, proposed three forms of change for logical consideration. Namely:

a) *Alteration*, stated as "X gets to be Y", meaning that something is characterized as X and not Y at one time and as X and Y at a later time. This is intended to imply that, while remaining X for the whole time under consideration, the individual thing concerned is successively not Y then Y. This signifies a mere change of attributes (not Y to Y), without essential change (X constant).

b) *Mutation*, stated as "X becomes Y", meaning that something is characterized as X (and not Y) at one time and as Y (and not X) at a later time. This is intended to imply that the individual thing concerned does not remain X or Y for the whole time under consideration, but is successively X then Y (these two being different, or incompatible, characterizations). This signifies metamorphosis or essential change (X to Y), insofar as the thing concerned is here defined by its being X or Y.

c) *Evolution*, stated as "Xs evolve to Ys", meaning that *a set* of things is characterized as Xs (and not Ys) at one time, *gives rise to another set* of things characterized as Ys (and not Xs) at a later time. Note well the intended implication here that the individuals subsumed under the classes X and Y are all different entities, although there is a significant causal relation between them. For instance, in the evolution of a living species, the earlier individuals (the Xs) are no longer present at the later stage (among the Ys), but they are their biological ancestors.

The first two forms of change can be expressed in terms of each other. "X gets to be Y (after not being Y)" can be stated as "X + notY becomes X + Y"; and conversely, "X becomes Y" can be stated as "Something gets to be notX + Y (after being X + notY)". This is pointed out to show that the differentiation between changes of attribute and essence are relative, depending on what one focuses on as the substratum of change: in the case of alteration, the substratum is specifically the label "X", whereas in the case of mutation, it is more vaguely "some thing".

While the first two forms of change are found in Aristotelian logic, the third form did not become fully formulated (in Western philosophy[215]) till Darwin and after. Evolution is often confused with mutation, but they are clearly very different logical forms, note well. Two very different kinds of subsumption are involved.

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214 See my *Future Logic*, chapter 17, and *Volition and Allied Causal Concepts*, chapter 14.

215 Leaving aside some vague brief statements to similar effect in ancient Greek philosophy.

Mutation concerns an *individual* entity, which persists from its early state (X) to its later state (Y); in the plural (i.e. some or all X become Y), this form refers to many entities but still as individuals. Evolution distinctively refers to groups, so that the individuals referred to at the beginning of the change (Xs) are *not* the same as those referred to as the end of it (Ys). Implied in the latter case is, not only a qualitative change in the same individuals, but more thoroughly a change of individuals. Nevertheless, note well, the two sets of individuals are causally related in some way, i.e. there is still a *continuity* of sorts between them; this is why we say that one set has evolved into the other.

These three forms of change seem to cover all our ordinary discourse concerning change. On the surface, that analysis of change seems unassailable; but as we shall now see, it is possible to radically criticize it.

13. Buddhist critique of change

The above analysis of alteration and mutation, inspired by Aristotelian logic, has a weakness, in that it refers to "something", some underlying abiding essence or static substratum in the midst of the forms of change considered. Thus, we defined alteration by saying "*something* is characterized as X and not Y at one time and as X and Y at a later time" and mutation as "*something* is characterized as X (and not Y) at one time and as Y (and not X) at a later time".

In the case of alteration, the thing concerned retains the qualification X throughout the process of change; whereas in the case of mutation, the only implied constancy is the thing's quality of existence. This relatively constant "something" in the midst of change may at first sight seem obvious, but upon reflection it is open to criticism. It is at least an element in our analysis that has to be discussed and somewhat justified, assuming we find no reason to decidedly reject it.

Alteration is presented as a mere change of predicate, and mutation as a more radical change of definition, but in either case it is presumed that there is some one thing to which those changing predicates and definitions are being attributed, something that is unitary enough during such changes that we can continue to name it by the same label (viz. "X" in alteration or "something" in mutation).

The Buddhist critic would suggest that it is illegitimate to assume such underlying constancy without first establishing it; and that would seem something hard to do, in view of the transience of all things experienced. He would suggest that change in general fits more into the format of evolution than in those of alteration or mutation. For in the evolutionary model, the two terms of the proposition do not refer to the same individual instances, but to instances that have been in constant flux, and which are related to each other by mere causal succession rather than by uniformity in identity.

Alterations and mutations are of course in practice involved even in the course of evolutionary change (e.g. in evolution of species, the individuals of a species at any stage are themselves subject to alterations and mutations), but such underlying events remain tacit in the formal presentation of evolution, because even if such individual changes were imagined as totally absent, the definition of evolution would remain applicable provided earlier species generated later ones.

Thus, the evolutionary theoretical model could be considered universal, if we do not assume (as Aristotle did) that individuals themselves change in alteration and mutation, but rather assume (as Buddhists suggest) that we are faced with successions of individual appearances, which we may assume are causally connected. On this basis, rather than constancy of identity, an individual is named with the same name across time.

That is, my dog yesterday is not strictly-speaking the same dog as my dog today or tomorrow, but rather each momentary appearance (from his birth to his death) is caused by an earlier appearance and causes a later one, and for this reason I may repeatedly refer to all these apparently connected appearances as "my dog". Strictly, then, a term like "my dog" is always meant in the present tense, but different instances of the present across time may be identified together under certain logical conditions (viz. causal continuity) and the term is then generalized to all my dog's existence as if he were one abiding essence.

Moreover, one might venture, that which says "my dog" (i.e. me), is also in flux, and not quite the same over time. However, while it involves valid criticism, this Buddhist perspective has its own weaknesses and even faults.

Its main weakness of conception is the appeal to causal connection between successive appearances. What is here meant by causality – and on what basis is such relation between appearances to be established? That is, how do we claim theoretical knowledge of causality as such, and how do we claim knowledge of it in a particular case? For causality (or at least, causation) is never known through single instances, but through generalizations – and to generalize we have to assume certain uniformities.

Thus, our recognition and concept of causality would seem to be logically posterior to our recognition and concept of identity, and not prior to it (as the Buddhist critique requires). There is no immediate and incontrovertible knowledge of either similarity or causality, but both are ratiocinations, i.e. logical formats or molds we (the cognizing Subject) try out tentatively on appearances, to gradually rationally organize them. These ratiocinations are inductive hypotheses, reflecting what seems to us applicable and true at a given stage in our knowledge development, but keeping an open mind for possible adaptations and corrections if (if ever) things appear differently at a later stage.

Moreover, it must be realized that this very discourse by the Buddhist critic is conceptual and verbal. The question must be asked: does the thesis proposed by the critic itself escape from the criticism used to support it? That is, if we apply the same criticism to the critic's discourse, do we not end up with the same doubt concerning it? The answer is obviously: yes.

Since the critic's discourse is itself verbal, it tacitly implies a uniformity of some sort in the midst of change, even while explicitly rejecting such uniformity as "merely verbal". To admit even a merely verbal uniformity is to admit uniformity as such. If we could not even say of two words that they are "one" in form and content, no discourse at all would be possible. If verbal uniformity is possible, then other types of uniformity may also be postulated. Since the critic resorts to words, he must admit the logical repercussions of such action[216].

As regards the Buddhist claim that "everything is continually changing", it must not be naively accepted, even if it is presented by its proponents as the essence of wisdom. On the empirical level, at a given moment of time that our consciousness encompasses as 'the present', we experience both changing and unchanging phenomena. The latter may in turn change the next present moment or at a later time; but the comparison involves memory and the assumption of time's passing, and so is not purely experiential but partly judgmental. We may indeed

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[216] This of course is what the Indian philosopher Nagarjuna refused to admit, choosing rather to criticize others by means of logic while claiming for his views a privileged exemption from logic. Such *selective* logic cannot properly be called logic.

experience changes in a given moment, but much of the changes we 'experience' occur over time and so are not purely empirical.

If we stand back and examine the existence of all phenomenal things across time, we may well conclude that everything we experience is subject to eventual change. But we must admit and keep in mind that *the rates of change* of different phenomena vary widely. While one thing is changing, another is apparently static. While one part of something changes, another is apparently static. There is not the total anarchy implied by the expression "everything changes". We may thus mentally hold onto something for some time at any given time, even if we cannot hold onto everything.[217]

This something 'held onto' can be the underlying subject of a proposition about alteration or mutation. Such propositions are thus logically justifiable.

[217] For example, I know my computer will end up in smoke one day, but meanwhile it is here and I can well use it and rely on it. I expect my life to be longer than my computer's existence, because people usually last longer than machines.

14. Different strata of knowledge

The fact of the matter is that we all experience appearances as same and/or different in various respects. This is a fundamental given of our ordinary experience, which we must admit, even while granting that it ought not be taken as necessarily true in all cases. And the latter caveat is not some sort of transcendental knowledge, but itself merely the product of common experience – viz. that sometimes, what has seemed to us as similar at first sight has later (upon review or reflection) seemed to us as different, or vice versa.

The basis of our rational ordering of experience is experience. We realize that it involves rational ordering only at a much later stage, after much philosophical reflection; but initially, we just instinctively do it and believe in it. The classification of such initial rationality as naïve is only possible *by means of* this very same faculty; there is no other, higher faculty by which we can do it. The subtlety of distinguishing between pure experience and rationally ordered experience is *itself a product of* such rational ordering and cannot be used to justify it or criticize it.

Once this natural order of things is understood, we can begin to understand the development and validation of human knowledge. To avoid adopting superficially logical but deeply illogical theories, we must always make sure we test any suggested argument or explanation on itself. By such reflexive thinking, we save ourselves a lot of time and trouble. This leads to the realization that human knowledge is essentially inductive, rather than deductive. Deductive logic can indeed help us eliminate absurd and inappropriate constructs, but a positive theory depends mainly on gradual induction, using experience to form and develop ideas by trial and error.

The "something" underlying change (in the Aristotelian view) is seemingly justified by experience in that when we perceive the world around us or in us, at any given moment, some aspects of the whole field of experience (all sense organs included) seem to be in flux and others seem to be static. There is no reason for us to admit the flux as real, while denying the evidence of our senses with regard to the unchanging aspects. We would have to provide some very convincing reason to allow such difference of evaluation. In the absence of justification, such difference of treatment would be arbitrary prejudice. It is therefore logical to admit both perceptions as equally empirical givens *ab initio*.

We may nevertheless, *at a much later stage in the ordering* of knowledge, in the way of a theory subject to the rules of inductive logic, posit an ultimate reality that is per se static while giving rise to changing appearances – or, oppositely, posit that nothing but change exists really. However, since the latter proposition is self-contradictory (being itself apparently something static to some degree), we would be wiser to aim for the former. Nevertheless, the

latter must still be given serious consideration, for it has much going for it as a description of our world of experience.

Both change and stillness are immediately apparent in our experience. They are concrete, perceptual givens in the physical and mental fields of experience. This is a phenomenological truth, whatever conceptual theories we may at a later stage construct concerning them. When I look, listen, or otherwise physically sense or mentally project – I sometimes see, hear, etc. static things, sometimes see, hear, etc. events in motion, sometimes a bit of both kinds of phenomena, and never neither (except in intuitive experience, which is non-phenomenal).

Change is not a mere conceptual construct out of experience – it is itself experienced. Likewise, stillness is not a mere conceptual construct out of experience – it is itself experienced. Thus, though stillness and change are opposites, we ought not define either of them by negation of the other. They are both independent percepts to begin with. At any moment, I may perceive some static things, some changing things, and some partly this and partly that. The concepts we have of change and stillness are later derivatives of those percepts. It is only on a conceptual level that change and stillness are correlated as each other's opposite.

This nuance between percept and concept has to be understood to avoid misleading analyses of the static or changing, which in any way reduce the one to the other or vice versa. Such analyses are theories – to be distinguished from the experiential facts of stillness and change. Such theories are not needed to prove the existence of stillness or change – their existence is already established by direct observation at every moment. The mere appearance of stillness and change is enough to justify the concepts of stillness and change, respectively.

It suffices that stillness *seems apparent* to categorically admit it exists; and it suffices that change *seems apparent* to categorically admit it exists. Their justification is pre-conceptual, phenomenological and prior to any epistemological or ontological hypotheses. This is true, even if at a more developed stage of knowledge, we hypothesize that apparently static phenomena are really underlain by change and so essentially illusory, or alternatively that apparently changing phenomena are really underlain by stillness and so essentially illusory.

We have to admit this position; otherwise, we would not be able to explain why or how things at all *appear* as static or as changing.

Thus, though the table I am looking at during this moment is an apparently quite static phenomenon, science tells me that beneath the surface, at more and more microscopic levels, this table is really composed of molecules, made up of vibrating atoms, themselves reducible to subatomic particles in motion, etc. Even while accepting the scientific theory as correct, I must still admit that at the level of my perceptions, the table does appear static. The conceptual knowledge science gives me of the table *does not annul* (but only complements) my perceptual knowledge of it.

Similarly, though I may go on to claim that even more deeply, the changes postulated by science are themselves just some of the movements of a single, universal fabric of being – such ultimate monistic philosophy must not be construed to invalidate the observed fact of changing phenomena at the perceptual level or the conceived fact of change in scientific

descriptions of what goes on beneath the surface of static or changing phenomena. Monism is a philosophy, a theoretical construct, intended to explain[218], not erase, the facts of change.

Moreover, if through meditation we eventually arrive at a direct experience of the essential unity and rest of all things, such mystical experience could not be regarded as canceling lower level experiences of change and stillness, or theories about such experiences.

Note too that all the above comments can be repeated with regard to uniformity and variety, peace and conflict, eternity and temporality, and all such basic dualities. At no level of existence or knowledge are the levels above, below or adjacent to be considered as eradicated; they all coexist. All this may seem somewhat paradoxical, but it is the only way to reconcile differences.

[218] For example, monism might explain the differences between matter, mind and soul by postulating different degrees or shapes of motion. Viewing the ultimate fabric of existence as resembling a sea – matter might be represented by big waves and currents, mind perhaps by little vibrations, and soul say by rotations. By such analogy, we can roughly imagine how these three "substances" might be quite different yet essentially the same. (This example is not intended to exclude the possibility of other, better models.)

15. Impermanence

Man is like a breath; his days are as a passing shadow. (Ps. 144)

The transience[219] of worldly existence is rightly emphasized by Buddhism; but it is wrongly formulated when it is stated as "everything is transient" (or some similar expression), because "everything" formally includes the statement itself, implying it to be transient too, whereas the statement is intended as a law not subject to change – so there is self-contradiction. The contradiction is avoidable if we just qualify the statement, saying: "everything *in this world* is transient", implying that beyond the domain of material and mental phenomena there is some sort of stability.

The existence of an underlying or transcendental constancy is admitted by Buddhists when they speak of the "original ground of being" or of our having a "Buddha nature" – but they are at the same time doctrinally committed to the idea of universal transience. The latter is a dogma many refuse to budge from, although when pushed to the wall some will admit that there are "two truths" – the truth of transience in this world and the truth of permanence in the world beyond.

That is to say, whereas the world of matter and mind (known through sensory and mental perception) is indeed impermanent, the world of the spirit (known through intuitive consciousness) is free of change.

Consider for example a car. If we scratch the paintwork or change one of its wheels, is it another car or the same car? We would conventionally continue to regard it as "one and the same" car, but add that its paintwork was scratched or its wheel had changed. But if this is true, then if we successively changed all its parts, we would be calling a completely different car "the same" car, even though not one of its parts is still present at the end of the process!

Analysis of this sort shows that there is some absurdity in our naming material – or likewise, mental – objects as if they are constant – although they never are. The question then arises: where should we draw the line? How many changes are compatible with calling the car the "same" individual, and how many force us to call it a "different" individual? Any answer we might propose would obviously be quite arbitrary!

This insight was central to the Buddha's doctrine that phenomenal objects are mere composites without an abiding essence. There is no "ghost" of a car underlying an apparent individual car, which stays on while the components of the car change (as they inevitably and invariably do). The same is true for any part of the car: e.g. a wheel is itself a mere composite

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219 *Anitya* in Sanskrit.

of bits of metal and rubber. There is no concrete phenomenon we can point to and call "the car" or "the wheel". The same can be said of mental objects, i.e. memories, imaginations, anticipations and dreams.

It follows that our naming of material and mental objects is a conventional act, which cannot sustain critical scrutiny. The individual object is *apparently* "the same" moment after moment, because we conceive *a similarity* between our perceptions at successive times. But such similarity is an abstract truth, made possible by our ability to compare perceptions and find some common measures between them. It is not a concrete truth – there is no phenomenal underlying unity. Thus, and in this sense, the appearance of sameness is an illusion and not a reality.

Note, however, that this argument is not entirely convincing. First, because in involves an extrapolation from an epistemological limitation (our inability to perceive an essence) to an ontological assumption (that there is no essence). This is presented as a deduction, whereas it is a mere hypothesis – and inductive logic still allows us to propose the counter-thesis that there is a unity of some sort, provided we adduce more favorable evidence and arguments in its support.

Second, we can point out that in the transition from one composition of the object to another (e.g. a car with a old wheel, then with a new wheel), there is some continuity in the way of *overlap* (i.e. some of the car parts seem unchanged). We could not change *all* the car parts *at once* and call the new construct "the same" car (i.e. the same individual car, even if the kind of car is the same); the past constituents would have to instantly disappear and be "replaced" by a new set of constituents – and even then (if we could prove this had indeed occurred) we would hesitate to call the two incarnations "the same" individual.

This is at least true for matter; that is to say, in our experience of matter we do not encounter complex things that instantly pop in or out of existence, or change into something completely different. This sort of wild behavior is, however, experienced in dreams or daydreams – and the reason why is that in the mental domain we are free to *intend* any one thing to be "identical with" any other thing. Even so, even though mental scenarios are arbitrary, it does not follow that what we thus intend is really equal.

The next question to ask would be: are there or not ***irreducible primaries***, i.e. phenomena (whether material or mental) that are not themselves composed of other phenomena? Some Buddhist philosophers (of the Abhidharma school) have insisted that there must be some initial building blocks (said in Sanskrit to have *svabhaha*, "own-being" or "self-nature"[220]) from which all other things in the world are constructed; while others (mostly from the Mahayana school) have opted for the idea that there is no end to the subdivision of matter and mind into simpler constituents.

The former opinion may be compared to the atomism[221] of antiquity and early modern science, and the latter to more recent approaches in modern science, which keep going deeper in matter and finding no end to it.

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[220] I find enervating the way many people keep piously repeating the expression "self-nature" as if it has some clear established meaning. It is far from clearcut, and so cannot even be used as a logical yardstick the way some Buddhists use it.

[221] 'Atom' literally means 'cannot be cut up further'; the word is here being used in a generic sense, not in the specifically material sense intended by Democritus or Dalton. The idea of atomism is

I would like to state that contrary to common claims by its opponents so-called Aristotelian logic does not depend on belief in "essences" for its validity. The term is for a start ambiguous: does it refer to concrete particulars (i.e. irreducible primary phenomena), or to abstractions (i.e. conceived commensurability)? If by essences we mean abstractions, it is clear that logic would be unnecessary and impossible without them. But if we mean concrete prime constituents, the laws of thought are equally applicable whether they are affirmed or denied. They do not prejudice the result of infinite subdivision, but they do clarify some potentially absurd lines of thought.

For one, the infinite subdivision view seems nihilistic if taken to an extreme, and indeed some have taken it that far, inferring that literally nothing (or "emptiness") is at the root of all being. But such an inference is not only paradoxical – it is not justified from the premises. For even if we forever keep finding smaller or simpler constituents, it does not follow that the constituents ever become non-existents. It is a fallacy, like the assumption that infinite divisibility of space ultimately implies subdivisions without extension, or that an infinity of zeros can add up to anything more than zero.

Also, those who claim that you can keep subdividing things, i.e. each phenomenon can be reduced to still finer phenomena ad infinitum, do not realize that this "you can" claim is fantasy and generalization. For, in truth, they do the subdivision *mentally*, and not physically; and they do it a *small number of times*, and not infinitely (which would surely take forever). Emptiness in this sense is not an experience, but at best a rational truth; and it is not even a deductive certainty, but a mere generalization. Thus, emptiness is at best an inductive truth.

To claim emptiness as a sure fact, one would have to be literally and demonstrably *omniscient*, knowing all of physics, chemistry, biology, psychology and everything else in advance of any empirical efforts. One cannot subdivide something if one does not know what to subdivide it into; for instance, to say that white light is a mix of various colors of light, one would need to have experimented with a prism.

Furthermore, emptiness cannot be claimed a one-off *experience*, because it is defined by negation as the absence of "essence" (or "self-nature"). Negation is a basic act of reason; it is not something ever directly experienced, not a positive phenomenon. Thus, to claim that what the Buddha experienced is precisely emptiness, it would be necessary to claim a positive character to emptiness; otherwise, it must be admitted his rational faculty was involved.

Another fallacy involved in this view is the idea that "relationships" are somehow more real than the things (or non-things) they are considered as relating. It is claimed that nothing exists on its own, but everything exists dependently on other things or on everything else (codependence or interdependence theory) – but the relations of causal dependence here referred to seem to be implied to have independent existence! Superficially, due to use of 'solid' words, the dependences of all things on each other seem to provide a support for their

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that there are irreducible constituents of matter (and eventually, we could add, of mind), whose movements and combinations can be traced to explain all entities and states of the material (and analogously, the mental) world. If atoms had a beginning, they all came into being together; and if they ever have an end, they will all go together; so that, as of when and so long as the world exists, they are effectively unborn, unconditioned and indestructible. This is postulated in support of the hypothesis that atoms, though possibly of different varieties, do not change qualitatively, or increase or decrease quantitatively, but merely move around.

alleged emptiness – but if the same analysis is also applied to those relational suppositions, everything is left hanging up without support.

Those who adopt this view do not realize that they are using the word "things" in a way that does not subsume "dependencies" – i.e. in a way not as wide-ranging as it seems. If we examine their outlook closely, we realize that by "things" they mean the concrete objects of experience, i.e. phenomena, while by the "relations" between things they mean abstractions introduced by conception. So ultimately their thesis is that concepts are more "real" than percepts! This is the very opposite of inductive logic, for which phenomenal data precedes and justifies any rational ordering and organization.

A more credible viewpoint, which reconciles the two said theses, is to assume some sort of monism – i.e. that all things are expressions of the same one thing. We need not regard that ultimate matrix of being as literally substantial, as did the alchemists of yore when they spoke of a *prima materia*. On a material level, the idea of an 'ether' (a cosmic fluid of some sort) has been shown untenable by the constancy of the speed of light; and the idea of 'fields' that replaced it is still rather abstract and needing of ontological clarification.

As for the stuff of mind, it might be assumed some kind of rarified matter, or vice versa, but that issue yet needs to be resolved. One problem in proposing this sort of equation is that we commonly believe that "mind" (i.e. the substance of mental objects, like memories, dreams, imaginations and anticipations) is more dependent on consciousness and its Subject than "matter" is.[222]

In any case, some sort of ultimate unity of all phenomena has to be assumed. In this monist model (as against the pluralist and nihilist hypotheses), the apparent variety and variability of the phenomenal is but an "expression" of the ultimate One[223]. The phenomenal is the surface of being, while the One is its depth. Whatever the mode of existence of that One (be it conceived as spiritual or energetic), it remains constant even as it generates variegated phenomena.

If "all is indeed One", then "all names are falsely divisive" and "all phenomena are interdependent" (or at least all depend on the same common source). Thus, monism ought to be acceptable to the Buddhist philosophers who have the views described above. It is also acceptable to their critics – since we can say that at the level of the One, names are falsely divisive and phenomena are co- or inter-dependent; but at the pluralist level of common phenomena, names are valuable and extreme dependence is misleading.[224]

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[222] Material objects seem more independent of their observers than do mental objects, since two or more persons may see the same material object (it is in the public domain) and when one leaves off watching it the other(s) continue to see it; whereas, a mental object is seen by only one person (it is in a private domain) and fails to exist if unseen by that person. While a material object is not apparently a product of any observer or nervous system, a mental object is considered as voluntarily produced by its observer or at least produced by the brain associated with that observer. Note however that in the case of mind, it is not accurate to say that consciousness affects its content – rather, the mental content is produced just prior to its being observed (although such production may necessitate earlier acts of deliberative consciousness). So the "subjectivity" involved is not extreme – there is a mental object somewhat apart from the Subject and his/her consciousness of it.

[223] Such monism is perhaps intended by the Buddhists in their concept of the *dharmakaya*, although if pressed they would likely insist on equating this original ground of being with *sunyata* (emptiness).

[224] This is more or less the Buddhist doctrine of Two Truths, anyway.

Be it said in passing, the spiritual expression of belief in monism is equanimity.

16. Buddhist denial of the soul

The same analysis as above can be applied to humans, but only to some extent. If we identify ourselves with our bodily and mental experiences, we come to the conclusion that we are likewise composites empty of essence! Most Buddhists stop there and declare that therefore we have no self. But here they are committing an error, for it is wrong to limit our experience of humans to their material and mental manifestations[225]; we are evidently aware of more than that. Our spiritual experiences must also be taken into consideration – and in that case we must admit that we can become (by a mode of experience we may call apperception or intuition) aware of our "self" (or spirit or soul).

In truth, Buddhists agree with this viewpoint when they admit that we are potentially or ultimately all Buddhas[226] – this is effectively an admission of soul, although most would dogmatically refuse that inference. Some say pointblank that there is no soul; but others, prefer to be more cryptic, and say: "there is and is not; and there neither is nor is not"[227]. But logically, these two (or more) postures must be considered equivalent, as their intent is simply that it is wrong to claim that soul exists.

But let us insist – our bodies and minds are composites and impermanent, like cars or dreams, but we differ in that we have a relatively abiding self. (I say "relatively abiding" to stress that the individual soul need not be considered absolutely eternal, although the common source of

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[225] As previously pointed out: in *Phenomenology*, chapter V, and in *Meditations*, chapter 12, the terms "self", "consciousness" and "mind" are in Buddhism sometimes treated as equivalent, and yet sometimes used with slightly different senses. As a result of such vagueness, wrong theories are proposed and many inconsistencies remain invisible.

[226] I give you one example (though I have come across many). S. Suzuki writes: "So it is absolutely necessary for everyone to believe in nothing. But I do not mean voidness… This is called Buddha nature, or Buddha himself" (p. 117.)

[227] To be fair, see Mu Soeng p. 125. According to that (excellent) commentator, the *anatman* doctrine was never intended as "a metaphysical statement" but as "a therapeutic device". As he tells it: "The Buddha responded to the Brahmanical formulation of a permanent entity, the self or atman, with silence, without taking a position either for or against." Logically, this would imply Buddhism to consider the issue of self to be merely *problematic*, neither affirming nor denying such a thing. However, in my own readings of Buddhist texts, I have more often than not read an assertoric *denial* of self, or a "both yes and no, and/or neither yes nor no" salad, rather than merely an avoidance of the issue of self. Another comment worth my making here: the idea of a self ought not to be identified with the Brahmanical idea of a *permanent* self; the latter is a more specific idea than the former, and denial of the latter does not logically entail denial of the former. I support the idea of an *impermanent* individual self, assigning permanence only to the universal self (i.e. the transcendent, or God). These (and many other) nuances should not be glossed over.

all spiritual substance – which many of us identify with God[228] – is necessarily absolutely eternal.)

By self (or spirit or soul), we mean *the Subject of consciousness* (i.e. the "person" experiencing, cognizing, perceiving, conceiving, knowing, etc.) and *the Agent of volition and valuation* (i.e. the "person" who wishes, wills, values, etc.). Note well this definition, which is often ignored by those who deny the self's existence.

A machine, computer or robot has no self – we (humans, and at least higher animals) evidently do: we all well know that we do. This self that we know is not our ego (a collection of aspects of our body and mind), though most of us do tend to confuse our self with our ego.

The self we know is manifest in our every act of cognition, volition or valuation, as the one engaged in that act. Although it is non-phenomenal, we are quite able to be aware of it. Although non-phenomenal, the self relates to phenomena (to those of its own body and mind, as well as to those further afield) either as their witness (i.e. through cognition), or by being affected by them or (when cognizing them) influenced by them, or by affecting them (through volition). But, though thus related to phenomena to various degrees, it is not identical with them and not to be identified with them.

The Buddhist denial of self is presented as empirical: one's own bodily and mental experience is carefully examined, and nothing but passing phenomena are observed in it. But my contention is that such analysis is based on incomplete data – it does not take into account the intuitive self-awareness of the Subject and Agent. The self is willfully ignored in the way of a prejudice, rather than denied as a result of dispassionate observation. The non-self is not here a conclusion, but a premise – a dogma, an ideology.

Moreover, it must be stressed that the negation of any term (whether the term 'self' or any other) cannot logically be purely empirical. We never perceive a negative, we only search for and fail to perceive the corresponding positive, and thence *inductively* 'infer' that the thing negated is absent. This conclusion is not necessarily final – it is a hypothesis that may be later overturned if new data is encountered that belies it, or even if an alternative hypothesis is found more frequently supported by the evidence.

Thus, the non-self cannot be – as Buddhism presents it – a purely empirical product of deep meditation; according to logic, its negativity makes it necessarily a *rational* construct. It is therefore not an absolute truth of any sort – but a mere generalization from "I diligently searched, but did not so far find a self" to "no self was there to be found". It is not perceptual, but *conceptual* – it is a thesis like any other open to doubt and debate, and requiring proof (in the inductive sense, at least). If no inconsistency is found in its counter-thesis, the idea of a self may also legitimately be upheld.

Thus, even though we may admit that the body and mind are devoid of essence(s), we can still claim that there is a soul. The soul is not meant to be the essence of the phenomena of body and mind, but a distinct non-phenomenal entity housed in, intersecting or housing[229] these

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228 See reasons for this in my *Meditations*, chapter 8.

229 We tend to view the soul as a small thing, something somewhere in the body or at best coextensive with it. But we should at least conceive the possibility of the opposite idea – viz. that the soul is enormous in comparison with the body, i.e. that the body is a small mark within the soul or a minor appendage to it. Our view of their relative size is, in truth, a function of the relative importance we attach to them, i.e. how frequently we focus our interest on the one or the other.

phenomena in some way. Body and mind merely constitute the soul's mundane playground, i.e. a particular domain of the world over which that individual soul[230] has special powers of consciousness and volition.

This view agrees with the proponents of emptiness at least in the insight that the self is not to be confused with body and mind. Also, the fact that the soul is non-phenomenal, i.e. neither a material nor a mental entity, does not logically exclude that it too be "empty" of essence, of course. But, whereas they go on to claim that the self does not exist, we would insist that even if (or even though) the individual soul is empty, it evidently exists – just as body and mind evidently exist whatever we say about them.[231]

It is in any case patently absurd to say or imply, as the Buddhists do, that *a non-existent* can think that it exists and (upon enlightenment) realize that it does not exist! A non-existent cannot think or realize anything; it is not an entity or a thing – it is nothing at all, it is not. An existent, on the other hand, can well (as these existing Buddhists do) think that it does not exist and other such nonsense! There is no logic in the no-self viewpoint.

The non-self idea may be viewed as supportive of materialism (in a large sense of the term, which includes mental phenomena as within the domain of matter). That is why many people today find it appealing: eager to reject the demands and constraints of the ethics of monotheistic religion, yet wishing to retain or introduce some spirituality in their lives, they embrace soul denial.

All this is not intended to deny the crucial importance of *self-effacement* in meditation and more broadly in the course of spiritual development. I would certainly agree with Buddhist teaching that the self at some stage becomes an impediment to enlightenment and must be effectively forgotten to contemplate things as they are.[232]

But to my mind, the non-self thesis need not be taken literally. I think Buddhists formulated it as an *upaya*, a skillful means[233], to facilitate forgetting the self. It is easier to forget what one believes does not exist, than to forget what one believes does exist. As far as I see (at my present stage of development), though disbelief in the self has some practical advantages, there is insufficient theoretical justification for such a doctrine.

We colloquially say that our mind is "empty" when our mind-space is for a while without feelings or thoughts, as occasionally happens quite naturally. In that state of mind, we are generally less distracted, and can observe whatever presents itself to us without interfering in the presentation. Sometimes, that commonplace empty-mindedness is experienced rather as a sort of momentary detachment or even alienation from the world around us, as when our eyes become unfocused and just stare out without seeing anything.

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230 Or individuated soul. I say this to stress that the individual soul may be considered as artificial subdivision of the universal soul (or God, in Judaic terms).

231 In my view, whatever even just but appears to exist does indeed exist (if only in the way of appearance). Is it real or illusory, though? Those characterizations are open to discussion, and depend on a great many logical factors.

232 Judaism agrees with this epistemological and ethical posture, as evidenced for instance by this statement of the Baal Shem Tov: "Before you can find God, you must lose yourself". (From *A Treasury of Jewish Quotations.*)

233 Ultimately, Buddhism is not interested in descriptive philosophy; what concerns it is to liberate us spiritually. If an idea is effective as a means to that end, it is taught.

The Buddhist sense of the word emptiness is of course much more complex than that, though not totally unrelated. When applied objectively, to things beyond or within the mind, it signifies that they are viewed without recourse to superimposed categories or hypotheses. Applied subjectively, the implication of the term is that the self is an illusion of consciousness, i.e. that our apperception of a cognizing soul is likewise a merely superimposed idea.

But is this Buddhist claim to be taken on faith, or do they manage to prove it incontrovertibly in any way? The mere fact that this doctrine was once proclaimed, and is claimed again by many authorities throughout the centuries, does not in itself make it a certain truth. We must be permitted to doubt it, and ask questions about it, and raise objections to it – without being accused of being heretics or morons.

17. The status of sense perceptions

I would like here to explore some more aspects of the controversy between Materialism and Mentalism[234]. Note that both views are here taken to acknowledge mental phenomena: the mentalist (or mind-only) view accepts mental phenomena to the exclusion of material ones, whereas the materialist view (as here understood[235]) accepts material phenomena without excluding mental ones from the world (though it circumscribes their occurrence in "minds" like ours).

Is sense perception objective (and therefore valid) or subjective (and therefore invalid)? That is, is the world we perceive apparently through our sense organs material, or is it as mental as the phenomena we project in our imaginations? Most people, including most scientists and philosophers, accept things as they seem at the outset, and opt for the materialist thesis. But some philosophers, like George Berkeley in the West or the Yogacara School in the East, would argue that this 'common-sense' conclusion is rushed, and prefer the mentalist alternative.

The latter suggest that the whole notion of sense-organs is flawed, because if we suppose that there is a cognizing entity enclosed in a physical body with organs of sensation, through which information of other physical bodies beyond is obtained, the information actually cognized by the subject-entity is not the *physical objects* supposedly in contact with the sensory receptors, but *mental products* of such supposed objects at the other extremity of the process of sensation, i.e. directly opposite the one cognizing.

If, then, what we actually perceive are not physical objects but assumed mental products of them – it follows that all our actual objects of perception are all mental and none are material. That is, even our apparent body (including the sense organs it seems to contain) is effectively a mere mental phenomenon; and there is also no reason to suppose that the material world apparently beyond them is anything but mental.

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234 See also earlier comments of mine on this issue, in *Future Logic* (chapters 60-62), *Buddhist Illogic* (chapters 4 and 5), *Phenomenology* (chapters I-IV), *Ruminations* (chapter 2, Sections 16 and 17), and *Meditations* (chapter 32).

235 I simply ignore the "matter-only" hypothesis, known as Behaviorism in modern philosophy and psychology, because that hypothesis is clearly unscientific, since it deliberately ignores all mental phenomena, treating them as non-existent (and not merely as rarified forms of matter). Mental phenomena are phenomenological givens, and cannot be just waved-off as irrelevant. That we cannot to date materially detect and measure them does not justify a materialists thesis, since this would constitute a circular argument.

That is, concluding this line of argument, the very distinction between mental and material must be abandoned as a silly idea, and only mental objects admitted as real. Phenomena ordinarily classed as material are just as mental as imaginings (though perhaps less readily controlled). Their appearance is real enough, but their materiality is illusory. Thus, materialism is a naïve philosophy, and mentalism is the correct doctrine.

I have in the past always argued that this skeptical argument is logically *self-contradictory*, because it starts with an assumption that the body and its sense organs exist in a material sense, and ends with the conclusion that there are no such material body and sense organs. A conclusion cannot contradict the premise(s) it is drawn from – so this argument must itself be logically flawed.

But now it occurs to me that this counter-argument of mine might be unfair, and I wish to review it. It occurs to me that it is formally acceptable for a conclusion to contradict its premise(s) – this is just what (single) paradoxical propositions mean. A proposition of the form "If P, then not P" is logically quite legitimate (if not accompanied by a second proposition of the form "If not P, then P", for in such case we have an insoluble double paradox, i.e. a contradiction). The logical conclusion of "If P, then not P" (alone[236]) is the categorical proposition "Not P".

In the case under scrutiny, the premise P is "there is a material body with sense organs" and the conclusion NotP is "there is no such thing" – and such inference is quite thinkable, quite legitimate according to the laws of thought. That is, rather than view the argument presented by the skeptics as self-defeating, we might suggest that they have shown materialism to be inherently paradoxical and thus self-contradictory, and rightly concluded mentalism to be the only internally consistent thesis of the two!

However, I have seen through this line of argument from the start, when I contended, in my *Future Logic* (chapter 62), that the solution to this conundrum was to deny the idea that what we perceive, when we seem to perceive material objects through the senses, are mental images of such material objects. I believe this is the error of conception regarding the nature of sense perception, which is logically bound to result in skepticism. John Locke made this error, and David Hume was quick to spot it (though he could not correct it).[237]

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[236] I.e. only in conjunction with "If not P, not-then P".

[237] Incidentally, in the Western philosophy of the Enlightenment (not to confuse this label with the Buddhist sense of ultimate knowledge, of course), the word "sensation" was used too vaguely. No great distinction was made between touch, smell and taste sensations, on the one hand, and visual and auditory sensations, on the other.

[Note that we linguistically tend to relate the touch, smell and taste senses. Thus, in English, 'feeling' may refer to touch-sensations (including hot and cold tastes), sensations of bodily functions (digestive, sexual, etc.), visceral sentiments (in body, of mental origin), or vaguely mental emotions; and 'sensing' may refer to physical sensations, or vague mental suspicions. Also, in French, the word '*sentir*' corresponds not only to the words 'to feel' and 'to sense', but also to 'to smell' (whence the English word 'scent').]

Yet, the three former sensations are far more easily misinterpreted than the latter two. E.g. it is far more difficult for us humans to identify someone based on touch, smell or taste sensations, than on visual or auditory sensations. By this I mean that touch sensations (etc.) usually tell us of a condition *of our own body caused by some other body external to it*, whereas sights and sounds are *aspects of the external object itself* that we (the Subject) somehow perceive. At least, this is the way things seem to us at first sight. We must still, of course, move from such Naïve Realism to a more Subtle Realism. In any case, each mode of sensation has its value, and they should not all be lumped together.

Locke was well intentioned, intent on justifying common sense; but his scenario was imperfectly conceived, and sure to lead to Berkeley's radical conclusion. However, there is a logical way out of the difficulty – and that is to conceive the sense organs as somehow allowing us to perceive the material objects *themselves*, or (more precisely) at least certain aspects of them, rather than only some mental products of them. If you reflect, you will realize that this is what we ordinarily assume we are doing when we perceive the world seemingly around us.

This is of course a hard scenario to explain, but it provides a possible justification for materialism (a self-consistent, non-naïve version), and thus an effective defense against the skeptical conclusion of mentalism. In this manner, the paradox inherent in naïve materialism is not ignored or denied, and yet the mentalist conclusion is not drawn from it, because a third thesis is proposed.

This third thesis is that sensation, rather than implying indirect perception, makes possible **direct perception** (*perhaps by producing some sort of physical structure in the brain serving as a passageway for the Subject's consciousness to get in direct contact with the object sensed*). This thesis is not, by its mere formulation, definitively proved, note well; but at least it serves to put the mentalist doctrine in doubt.

We are in this manner provided with two competing hypotheses, both of which seemingly equally account for experience; and the question of materiality versus mentality of the objects of certain perceptions is thus reopened. The issue is turned from a deductive one (favoring mentalism) to an inductive one (in which both doctrines are at least equally conceivable).

I thereafter posit further argumentation to show the reasonableness of the common sense (materialist) view. Since the matter-mind distinction is itself based on that view, it cannot be used by mentalists to declare all objects mental rather than material. Given their view, no such distinction would arise in the first place, and we would have no understanding of the different intentions of these two words.

Moreover, I have suggested that the distinction might be phenomenologically explicable, by saying that mental phenomena are merely visual and/or auditory, but lack other phenomenal qualities. Mental phenomena correspond to those experienced through sight and hearing, whereas touch, smell and taste sensations seem to have no equivalent forms in the mind. Our memories can recognize them, but they seemingly cannot reproduce them.

In other words, we perhaps recognize materiality by virtue of touch[238], smell and taste sensations, granting that the mental domain lacks these specific phenomenal modalities. Visual

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By the way, another vague term in this school has been "ideas". This term tends to have been used indiscriminately, sometimes applied to perceptual memories, or again to visual or auditory projections, and sometimes applied to conceptual constructs, whether or not verbal. Yet, these different mental 'entities' have very different significances in the formation of knowledge. Clearly, relatively empirical data has more weight than more abstract productions. Making distinctions between different sorts of "sensations" and "ideas" is very important if we want to accurately evaluate the constituents of knowledge.

[238] Especially touch. Note how one sense of the term 'substantiality' is the hardness of a material object in reaction to touch. Solids are most substantial, resisting all pressure. By contrast, in view of their yielding, liquids are somewhat less substantial, and gases least of all. But all states of matter are also known to some extent through other sensations, like heat and cold, etc.

and auditory phenomena are ambiguous, i.e. they might be material or mental; but (I tentatively suggest) the other modalities are distinctively material.

An explanation for this may be that the senses of touch, smell and taste are biologically more basic, while those of sight and hearing occur further up the evolutionary scale. The former are more qualitative and pleasure-pain related, applicable to any sentient being, whereas the latter are more spatial and temporal, implying a more complex form of life.

It is also important to note that mentalists consider consciousness of mental objects as needing less explanation than consciousness of material objects. To them, knowledge through the senses is hard to explain, in view of the distance of the knowing subject from such objects; whereas, mental objects are more knowable because closer to us. Or if it is not an issue of distance to them, perhaps they consider that the knower is of the same substance as mental objects.

But we must realize that consciousness of mental objects is just as marvelous, mysterious and miraculous as consciousness of physical objects.

To regard mental objects as of the same stuff as the knowing self (because we colloquially lump these things together as constituents of the 'mind' or psyche) is an error. Mental objects like memories, imaginations or ideas are not themselves conscious: they are always objects, never subjects of consciousness; therefore they cannot be essentially equated to the soul that knows them.

As for distance: on what basis are physical objects regarded as further afield than mental objects? Such spatial considerations are only possible if we locate the soul in a continuum including mental and material objects. But in truth, we do not strictly believe in a continuum common to both mental and material objects, although some mental projections (hallucinations) do sometimes seem to inhabit the same space as physical things. Furthermore, we do not know the exact 'place' of the soul: is it in the heart or in the brain or coterminous with the body or outside it – or is it in some other dimension of being altogether?

It should be added that consciousness of oneself, i.e. the intuition of self by self, is essentially no different from these two kinds of consciousness: only *the objects* differ in the three cases. That is, whether the objects are mental, material or spiritual in 'substance', consciousness is still one and the same sort of special relation. The same reflection also applies to eventual 'transcendental' consciousness, i.e. consciousness of God or of the Ultimate Ground of Being – this is still consciousness. Whatever the kind of object involved, consciousness remains marvelous, mysterious and miraculous.

Thus, asserting mentalism instead of materialism is not as significant for the theory of knowledge as might at first sight seem. The apparent gain in credibility in such change of paradigm dissolves once we pay attention to the question: but what is consciousness?

18. The status of dreams and daydreams

Do we logically need to have some absolute frame of reference to compare all others to, in order to claim that some frame of reference is relative? If that were the case, Einstein's theory on the relativity of space-time would be unthinkable. He could not claim all frameworks are relative. But he is not making such a claim by *deduction* from some privileged vantage point of his. What he is saying, rather, is that (because of the same measurement of the velocity of light in all directions) we cannot establish an absolute framework, and so we are condemned to viewing every framework we use as relative. This is an *inductive* argument, involving generalization from existing empirical knowledge.

It remains conceivable that, at some future time, scientists discover some other physical means to establish an absolute frame of reference. The same reasoning can be applied to Heisenberg's principle concerning the impossibility of identifying precisely and simultaneously the position and momentum of an elementary particle. This too is a theoretical principle built on practical considerations. It is based on a generalization of negation from "is not found" to "cannot be found" – but it remains conceivable, however remotely, that such a rule be abrogated in the future, if we find some other way to make the measurements required.

These examples within physical science can help us to inform an issue within metaphysics. Can we logically assert as do some philosophers that "everything is illusory" (or "awake experience is only a dream" or other similar skeptical statements). At first sight, a statement like "everything is illusory" is self-contradictory, and therefore definitively false, since "everything" formally must include the statement itself, which is thereby declared illusory. However, let us try and approach the issue in less deductive terms, and view the statement as a product of induction.

We can call an experience a dream because we have some other experience to refer to, which we consider non-dreamy. Usually, we realize *after* we wake up: "Oh, I was only dreaming". Exceptionally, it happens that we become aware *during* a dream that we are dreaming, and we can even force ourselves to awaken from within the dream (I have certainly experienced this several times). In either case, we characterize our asleep experience as "dream" only because we have memory of an alternative, awake experience. The very concept of a dream would seem to rely on such comparison.

Or does it? In comparing awake and asleep experience, we postulate that the former is more real than the latter, and thereby classify the former as "real" and the latter as "illusory". But what is the basis of such discrimination? Approaching the issue without prejudice, we might argue that (to begin with, at least) the two sets of experience are on equal footing (in terms of the reality vs. illusion distinction), i.e. that there is no reason to give precedence to the one

over the other. Phenomenologically, they are of equal value, or status. We cannot tell which is more real or more illusory than the other, and therefore must conclude that both are equally unsure.

A good argument in favor of this view is the observation that most dreams seem credible enough to us while we are having them. This just goes to show *our native credulity*, how easily we tend to believe experiences. Seeing how foolishly credulous we are while asleep, we may well wonder whether our credulity while awake is just as silly, and get to think that our apparent life is perhaps a dream too.

This is perhaps the intended meaning of statements like "all is illusion" – they suggest our incapacity to find some absolute frame of reference we can label "reality". But the reply to such objection would be the following. Contrary to what some philosophers claim, we do not in fact, in practice, label some parts of experience "reality" and relegate others to the status of "illusion" with certainty and finality. Such judgments are not absolute, but open to change using inductive reasoning.

The basic principle of induction is that every appearance is to be regarded as 'reality' *until and unless*, i.e. until if ever, conflicts between certain appearances, or between certain appearances and logical considerations, force us to relegate the appearance concerned to the status of 'illusion'.

We have no way to tell the difference between reality and illusion at first sight. We do not dish out the labels of reality or illusion from some privileged, neutral standpoint, but start with the assumption that everything we (seem to) experience is real, and only refer to some such experiences as illusory in the way of a last resort. And even then, later evidence or reasoning may make us change our minds, and decide that what seemed illusory was real and what seemed real was illusory.

The distinction between these two characterizations of appearance is thus essentially a holistic, hypothetical conclusion, rather than a point-blank premise. The more data we take into consideration in forming such judgments, the more certain they become. The initial assumption is that an appearance is real. But the initial credibility is still conditional, in that it has to be confirmed and never infirmed thenceforth.

This is obvious, because all we have to build our knowledge on are our experiences (physical, mental or non-phenomenal) and our rational faculty (for sorting out the experiences). We have givens and a method, but we still have to work our way to certainty, through a long, largely inductive process.

At first (naïvely), appearance, existence and reality are all one and the same to us. Gradually (with increased subtlety), we distinguish appearances as existents that have been cognized, and realities as appearances that have stood the test of time with regard to consistency with other experiences and with logical issues. Illusions are appearances that have failed in some test or other.

Comparison and contrast are involved in distinguishing awake and dream experiences. Because the former seem more solid and regular than the latter, we label the former "real life" and the latter "dream". Both sets of experience have to be considered before we can make this classification, and it is such perceived characteristics *apparent within them* that lead us to this rational judgment. Thus, the way remains open for further evaluation at some future time – for

example, if we encounter some third corpus of experience that seems still more real than the previous two.

This is the claim of mysticism – that there exists yet a higher reality, relative to which (when we reach it through prophesy, meditation or other means) ordinary experience seems but like a mere dream (note the language of analogy). It is in that context that it becomes perfectly legitimate to say: "all is illusion", meaning more precisely "all *that is in ordinary experience* is illusory", i.e. in comparison to all that is in extraordinary experience. The proposition is logically self-consistent, because it is not as general in intent as it seems to be in its brief verbal formulation.

Of course, according to inductive logic, if someone had *only* the experience we call dreaming, he would have to regard that experience as reality. Likewise, someone who has never had a mystical experience is duty-bound to assume that his ordinary awake experience is reality.

It follows that only someone who has personally experienced some third, radically different, experiential content may legitimately claim that our ordinary experience is akin to a dream. Someone who thereafter repeats the same claim *without* having himself had the corresponding extraordinary experience is just expressing his (religious) faith. The epistemological status of such faith is not nil, but it is not equivalent to that involved in personal experience. It is a tentative belief, an act of hope (or fear), based indirectly on someone else's *reported* experience – but not a belief based directly on one's own experience.

Note that even without referring to any mystical experience, it is not inaccurate to say that most of our awake experience is tantamount to dreaming. For what is dreaming while asleep? A series of mental projections; the invention of fanciful scenarios. And in truth, this is just what most of us pass most of our time doing while awake: we project mental images or sounds, viewing data either directly drawn from our memory banks or indirectly derived by reshuffling such memories. So we can rightly be said to be dreaming, even if we call it daydreaming.

In the last analysis, the only times we are *not* dreaming are those rare moments when we are actually fully absorbed in *the here and now* of direct experience!

However, according to those who claim to have had mystical experience of some transcendental reality, even this 'here and now' (made up of material and/or mental phenomena) ought to be regarded as dreaming. The latter statement is as radically metaphysical or transcendental as it can be, postulating all phenomenal experience to be dreamlike. In this view, dreams asleep are phantasms within a larger dream, and awake experience is also part of that larger dream.

People naïvely point to their apparently physical body in support of their claim to material reality, but so doing they fail to consider that when they dream while asleep they are usually represented in their dream by a mental image of a body. If this imaginary body seems credible to them while dreaming asleep, why might the apparently physical body experienced while awake not likewise wrongly seem credible?

Materiality, and its distinction from mentality, must ultimately be understood as a conceptual hypothesis, which we may philosophically adopt because it orders our world of experience (whatever its nature or status) in an intelligent and consistent manner. It is not an axiom, an

ontological primary, but an organizing principle open to doubt, which we commonly favor because of its ongoing intellectual and practical utility and success.

19. The status of conceptions

The **concept** of some thing(s), call it X, is *the sum total of all observations, beliefs, thoughts, inductively or deductively proven items of knowledge, opinions, imaginations, we (as individuals or collectively) have accumulated across time relative to* the thing(s) concerned – call these cognitive events or intentions: A, B, C, D, etc. Note well that the tag "X" refers to the objects X, intended by the concept of X, not to the mental apparatus or idea through which we know or think we know those objects.

Although we colloquially say that X "contains" A, B, C, D…, a concept is not to be thought of as a vessel containing a number of relevant mental entities, like a basket containing apples and oranges. It is best thought of as a collection of arrows pointing to various perceived phenomena, objects of intuitions, and related abstractions, which all together influence our overall idea of X. Our concept of X (an individual or kind) is our collection of beliefs about it.

The concept of X should not be thought of as equal specifically to its definition (as Kantians do), and still less to the name "X" (as Nominalists do). The name is just a physical or at least mental tag or label, allowing us to more easily focus on the concept, or more precisely on its contents (i.e. the objects intended by it). As for the definition, it is not the whole of X, but consists of some *exclusive and universal characteristic(s)* of X (say, A) among others (viz. B, C, D, etc., which may also be distinctive and always present, or not). One aspect is selected as defining, because it is helpful for complex thinking processes to do so. Definition is thus something both empirical and rational.

The definition "X is A" is therefore not a tautology, but holds information. Two propositions are involved in it: the predication that "X is A" and the claim that "A is the definition of X". The latter is an *additional* proposition; it implies the former, but not vice versa. We may know that X is A, while not yet thinking or while wrongly thinking that A is the best definition of X. Our idea of X would be equal to A if all we knew or thought about X was A; this is clearly very unlikely a scenario, though such paucity of information is theoretically conceivable. In practice, our idea of X includes much more, viz. B, C, D, etc.

We do not get the concept of man through the definition "rational animal", but through cumulative *experience* of men. The definition is only a later proposition, by means of which we try to find the essence of manhood – or at least, men. The proposed definition is itself a product of experience and not some *a priori* or arbitrary concoction. We may for a long time have a vague concept of X, without having found an adequate definition for it. When we do find a definition, it is not necessarily final. It is a hypothesis. It could turn out to be inadequate (for instance, if some rational animals were found on other planets), in which case some further differentia or some entirely new definition of man would need to be proposed.

Note in passing that **tautology** occurs when the predicate is already wholly *explicitly* mentioned in the subject, or the consequent in the antecedent. Thus, "X is X", "XY is Y", "if X, then X", "if X + Y, then Y" are all tautologies. It does not follow that such propositions are considered by logic as necessarily *true*. Their truth depends on the actual existence of the subject or truth of the antecedent. For it is clear that the latter may be merely imaginary or hypothetical, as for example in "unicorns have one horn". Thus, tautology is not proof of truth.

Clearly, too, a definition like "man is a rational animal" is not tautologous in the strict sense. Some nevertheless consider definition as an implicit sort of tautology, by extending the concept. Those who do so do so because they think that the concept defined is identical to its definition. This I of course do not agree with, for reasons already stated. Even so, note that if tautology is not proof of truth in the case of explicit tautologies, as just explained, the same follows all the more in the case of implicit ones.

Through definition, we try to identify the '**essences**' of things. The essence of some concrete thing(s) is rarely if ever itself something concrete, i.e. empirically evident. In most or all cases, essences are *abstractions*. We cannot produce a single mental image or Platonic Idea of man that would represent or reflect all individual men. We just point in the general direction of the notion of manhood by defining men as rational animals, but we cannot concretize it. The constituent terms 'rational' and 'animal' are themselves in turn just as or more abstract. This important insight can best be seen with reference to geometrical concepts.

In the concept of triangle, all possible physical or imagined triangles are included, those already seen and those yet to be seen, and all their apparent properties and interrelationships. If I ask you what the essence of a triangle is, you are likely to imagine and draw a particular triangle. But this is not the essence; it is *an example* – a mere instance. There is no one concrete triangle that contains all possible triangles. The essence of triangularity does not concretely exist; it is just an abstraction, a verbal or intentional contraption. That is to say, we mean by the 'essence' of a triangle, "***whatever happens to be distinctively in common to all*** triangles" – but we know we cannot mentally or physically produce such an entity.

The essence in such cases is thus just something pointed to in the foggy distance. We cannot actually produce it, but only at best a particular triangle. We can of course define the triangle in words as "a geometrical figure composed of three lines that meet at their extremities", or the like. But such verbal definition still hides the concept of 'line', which in turn cannot be concretized except by example; it just passes the buck on. It reduces the problem (of triangular essence) to another problem (that of linear essence), but it does not really solve it. This is perhaps why many logicians and philosophers opt for Nominalism. But we should not allow it to lead us to skepticism.

Rational knowledge is built on the assumption that particulars that *seem to us to have* "something distinctively in common" *do indeed have* something distinctively in common. We extrapolate from appearance to reality, at least hypothetically – i.e. on the understanding that if ever we find some specific observation or logical reason that demands it, we will reclassify the appearance as an illusion instead. This practice is nothing other than *an application of the principle of induction* to the issue of conceptualization. It is logically impossible to argue against this principle without explicitly or implicitly relying on it, since all such argument is itself ultimately inductive. Likewise, being itself conceptual, any putative theory against our belief in abstracts is easily discredited and dismissed.

The essence of an individual is what is conceived as abiding in it through all possible changes; the essence of a kind is that which is conceived has shared by all its possible instances of it. Moreover, in either case, the essence must be found in that thing or kind of thing, and in no other. But though we cannot usually if ever empirically point to anything that fits this definition of essence, we assume each thing or kind to have such a core, *because otherwise we could not recognize it as one and the same* thing or kind. We rely for this assumption on our faculty of insight into similarities and differences. Through such insight, we 'point towards' an essence – though we do not actually experience such essence.

Since the similar things (the individual at different times or the scattered instances of the kind) seem to point *in the same direction*, we infer by extrapolation that they are pointing *at something* in common (the apparent essence). This constitutes a reification of sorts – not into something concrete, but into something "abstract". There is thus some truth in what Buddhist philosophers say, namely that essences are "empty". However, we should not like some of them draw the negative conclusion that essences "do not really exist" from this emptiness. For we can, as already mentioned, rely on the principle of induction to justify our inference. Provided we do not confuse abstract existence with concrete existence, we commit no error thereby.

We may call such cognition of essences *conception or conceptual insight*. This implies that just as we have cognitive faculties of perception of phenomenal concretes and intuition of non-phenomenal concretes, so we have a cognitive faculty of conception through which we 'see' the similarities and differences between objects. Such insight is not, note well, claimed to be always true – it may well be false *sometimes*, but it cannot be declared always false without self-contradiction. Its veracity in principle is verified by the principle of induction, in exactly the same way as the veracity of experience is in principle verified. That is to say, we may assume in any given case such conceptual insight true, until and unless it there is experiential or rational cause to regard it as false.

It is very important to understand all this, for all rational knowledge depends on it.

20. The laws of thought in meditation

The three laws of thought are commonly considered by many current commentators[239] to be (at best) only relevant to rational discourse, and not relevant at all or even antithetical to meditation and all the more so to its finale of enlightenment. Nothing could be further from the truth, as will now be explicated.

The laws of thought are principally 'moral' imperatives to the thinker, enjoining him or her to have certain cognitive attitudes in all processes of thought. They call upon the thinker to make an effort, so as to guarantee maximum efficiency and accuracy of his or her thoughts. The 'metaphysical' aspect of the laws of thought is a substratum and outcome of this practical aspect.[240]

1. **The law of identity** is a general stance of 'realism'.

   In *discursive thought*, this means: to face facts; to observe and think about them; to admit the factuality of appearances as such and that of logical arguments relating to them; to accept the way things are (or at least the way they seem to be for now), that things are as they are, i.e. whatever they happen to be; and so on.

   Clearly, these same cognitive virtues are equally applicable to *meditation practice*, which requires **awareness**, receptivity and lucidity. The antitheses of these attitudes are evasiveness, prejudice and obscurantism, resulting in "sloth and torpor"[241].

   At the apogee of meditation, in the *enlightenment* experience, this is expressed as (reportedly) consciousness of the "thus-ness" (or "such-ness") of "ultimate reality".

2. **The law of non-contradiction** is a general stance of 'coherence' (which is an aspect of 'realism').

   In *discursive thought*, this means: while giving initial credence to all appearances taken singly, not to accept two conflicting appearances as both true (or real), but to place one or both of them in the category of falsehood (or illusion); to seek to resolve or transcend all apparent contradictions; to pursue consistency in one's concepts and theories; to reject inconsistent ideas as absurd and self-contradictions as untenable nonsense; and so on.

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239 Judging by Internet postings and debate on this topic.

240 It could also be said that the two aspects are 'co-emergent', mutually significant and equally important. But here I wish to stress the psychological side of the issue.

241 See Kamalashila, p. 253.

Clearly, these same cognitive virtues are equally applicable to *meditation practice*, which requires **harmony**, balance and peace of mind. The antitheses of these attitudes are conflict, confusion and neurosis (or madness), resulting in "restlessness and anxiety"[242].

At the peak of meditation, in the *enlightenment* experience, this is expressed as (reportedly) the "one-ness" (monism or monotheism) of "ultimate reality".

3. **The law of the excluded middle** is a general stance of 'curiosity' (which is also an aspect of 'realism').

   In *discursive thought*, this means: engaging in research and study, so as to fill gaps in one's knowledge and extend its frontier; engaging in speculation and theorizing, but always under the supervision and guidance of rationality; avoiding fanciful escapes from reality, distorting facts and lying to oneself and/or others; accepting the need to eventually make definite choices and firm decisions; and so on.

   Clearly, these same cognitive virtues are equally applicable to *meditation practice*, which requires **clarity**, judgment and understanding. The antitheses of these attitudes are ignorance, uncertainty and delusion, resulting in "doubt and indecision"[243].

   At the pinnacle of meditation, in the *enlightenment* experience, this is expressed as (reportedly) the "omniscience" of "ultimate reality".

Thus, I submit, rather than abandon the laws of thought when we step up from ordinary thinking to meditation, and from that to enlightenment, we should stick to them, while allowing that they are expressed somewhat differently at each spiritual stage. Whereas in discursive thought awareness is expressed by intellectual activity, in meditation the approach is gentler and subtler, and in enlightenment we attain pure contemplation.

When such final realization is reached[244], the laws of thought are not breached, but made most evident. "Thus-ness" is the essence of existence; it is the deepest stratum of identity, not an absence of all identity. "One-ness" is not coexistence or merging of opposites, but where all oppositions are dissolved or transcended. "Omniscience" is not in denial of ordinary experience and knowledge, but their fullest expression and understanding. What in lower planes of being and knowing seems obscure, divergent and uncertain, becomes perfect at the highest level.[245]

Those teachers or commentators who claim that the laws of thought are abrogated once we transcend ordinary discourse are simply misinterpreting their experiences. Either their experience is not true "realization", or their particular interpretation of their realization

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242 See Kamalashila, p. 249.

243 See Kamalashila, p. 258.

244 I submit, on the basis of my own limited experience, but also out of logical expectation of consistency between all levels of being. I think many people more knowledgeable than me would agree with the descriptions here given of the higher realms.

245 Buddhist, and especially Mahayana, philosophers often stress that nirvana (the common ground of all being) and samsara (the multiplicity of changing appearances) are ultimately one and the same. Even while admitting this, we must remain aware of their apparent difference. The whole point of the philosophical idea of monism ("nirvana") is of course to resolve the contradictions and gaps inherent in the experience of plurality ("samsara"). At the same time, the one-ness of nirvana is in a sort of conflict with the multiplicity of samsara. We must somehow both admit and ignore this tension. In truth, all this remains an unsolved problem at some level.

experience is just an erroneous afterthought that should not be viewed as part of the experience itself.

Instead of the laws of identity, non-contradiction and exclusion of any middle, they propose *a law of non-identity, a law of contradiction, and a law of the included middles!* According to them, the ultimate reality is that nothing has an identity, all contradictories coexist quite harmoniously, and there may be other alternatives besides a thing and its negation!

They adduce as proofs the Buddhist principles of non-selfhood, impermanence and interdependence.

But they cannot claim that something has no "nature" whatsoever, for then what is that "something" that they are talking about? If it is truly non-existent, why and how are we at all discussing it and who are we? Surely these same people admit the existence of an "ultimate reality" of some sort – if only a single, infinite, universal substratum[246]. They call it "void" or "empty", but surely such a negation is not logically tenable without the admission that something positive is being negated; a negation can never be a primary given.

Similarly, we might argue, "impermanence" means the impermanence *of* something and "interdependence" means the interdependence *of* two or more things. They cannot claim infinite impermanence, without admitting the extended existence in time of something however temporary; and they cannot claim a universal interdependence, without admitting causal connections between actual facts.

There is an unfortunate tendency here to use words without paying attention to their relational implications. Another example of this practice is to speak of "consciousness" (or perception or thought or some such cognitive act), without admitting that this implies consciousness *of* something (called an object) *by* something (called the Subject).

This is done deliberately, to conform with the ideological prejudice that there is no cognizing self and nothing to cognize. Similarly, so as not to have to mention the Agent willing an action, volition is concealed and the action is made to appear spontaneous or mechanical. They refuse to admit that *someone* is suffering, thinking, meditating or becoming enlightened.

Another claim often made is that our common experience of the world is like a dream compared to ultimate reality. The implication being that the laws of thought are not obeyed in a dream. But in truth, even in a dream, though images and sound come and go and seem to intertwine, actually there is no contradiction if we observe carefully. As for the difference between dream and awake experience, it is not strictly a contradiction since they are experienced as distinct domains of being.

Contradiction is not even thinkable, except in words (or intentions). We cannot even *actually* imagine a contradiction, in the sense defined by Aristotle (is and is not at once in every

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[246] The "great self" or "ocean of permanence", to use the words of Dogen (p. 267). Note that Dogen is not here saying there is no such thing, but is stressing that we do not – as some people claim – *automatically* all return there after death, but rather are subject to various rebirths according to our respective karmas; he is implying that to get there is hard-won realization, not something given *gratis* to all comers). Some identify this underlying ultimate reality with the "*Deus sive Natura*" of Baruch Spinoza (Holland, 1632-77). But I hasten to add that I do not subscribe to Spinoza's equation of God and Nature, which implies that God is like Nature subject to determinism. For me, as in normative Judaism, God is the free, volitional creator of Nature. He underlies and includes it. It is a mere product His and but a tiny part or aspect of Him.

respect). We can only *say (or vaguely believe)* there is one. We of course commonly encounter apparent contradiction, but that does not prove that contradiction exists in fact. It is an illusion, a conflict between verbal interpretations or their non-verbal equivalents.

We formulate theories; they yield contradictions; we correct the theories so that they no longer yield these contradictions. We tailor our rational constructs to experience. We do not infer contradiction to exist from contradictions in our knowledge. We question and fix our knowledge, rather than impose our beliefs on reality. That is sanity, mental health. That is the way knowledge progresses, through this dialectic of thesis-antithesis-synthesis.

21. Reason and spirituality

In Judaism, the rabbis consciously practice non-contradiction (and the other laws of thought) in most of their discourse; but in some cases, they desert this virtue.

For example, it often happens that equally authoritative commentators have divergent interpretations of the same text; nevertheless, both their positions are upheld as traditional and true so as to avoid any suggestion that any important rabbi might ever be wrong. In such cases, the rationale given is that the different, even conflicting, perspectives together deepen and enrich the overall understanding of that text. In non-legal contexts (*haggadah*), there is no pressing need to decide one way or the other, anyway; while in legal contexts (*halakhah*), a decision is often made by majority[247].

Also, as I have shown in my *Judaic Logic*, some of the hermeneutic principles used in the Talmud are not in conformity with syllogistic logic; some yield a *non sequitur* in conclusion, and some even a contradiction. In such cases, the absurdity occurs on a formal level, within a single line of reasoning (rather than in relation to conflicting approaches); yet the conclusion is often accepted as law anyway, because the (erroneous) form of reasoning is considered traditional and Divinely given.

However, it is interesting to note in this regard that there is a Talmudic law[248] about two people who find a prayer shawl and bring it together to the rabbinical court, both claiming it as their property (on a finders-keepers basis); these people are not permitted to both swear they found it first, since these oaths would be in contradiction and that would make one of them at least a vain use of God's name (a grave sin).

This Judaic law shows that the rabbis are ultimately forced to admit the logical law of non-contradiction as binding, i.e. as indicative of objective reality.

Similarly, in Buddhism, there are many teachers who insist on the importance of keeping one's feet firmly on the ground even while one's head is up in the heavens. They teach that karmic law should not be ignored or denied[249] – meaning that one should not act as if there are no laws of nature in this world and anything goes. To act irresponsibly is foolish and at times

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[247] Although in some cases, centuries later, scattered groups of Jews may follow different interpretations of the same decision.

[248] I unfortunately cannot find the exact Mishna reference at this time, but I heard it discussed by two Rabbis.

[249] I give you for example Dogen, who quoting Baizhang ("don't ignore cause and effect"), Nagarjuna ([do not] "deny cause and effect in this worldly realm... in the realm of practice"), Yongjia ("superficial understanding of emptiness ignores causes and effect") and others, decries "those who deny cause and effect" (pp. 263-9).

criminal. I would include under this heading adherence to the laws of thought; for without the awareness, harmony and clarity that they enjoin, healthy respect for causality would not be possible.

It is important, at this juncture in the history of philosophy, that people understand the danger of denial of all, or any, of the laws of thought. Due to the current influx of Oriental philosophies, and in particular of Buddhism, some would-be philosophers and logicians are tempted (perhaps due to superficial readings) to take up such provocative positions, to appear fashionable and cutting-edge. But while predicting that Western philosophy will be greatly enriched by this influx, I would warn against abject surrender of our rationality, which can only have destructive consequences for mankind.

Logic is one of man's great dignities, an evolutionary achievement. But it is true: logic alone, without meditation, morality and other human values, cannot bring out the best in man. Taken alone like that, it can and sometimes does apparently lead people to narrow-minded and sterile views, and dried-up personalities. But in the last analysis, people of that sort are simply poor in spirit – their condition is not the fault of logic as such. In fact, they misunderstand logic; they have a faulty view of it – usually an overly deductive, insufficiently inductive view of it.

The current ills of our society are not due to a surfeit of logic. Rather, our society is increasingly characterized by illogic. Many media, politicians and educators twist truth at will, and people let themselves to be misled because they lack the logical capacity or training required to see through the lies and manipulations. Rationality does not mean being square-minded, rigid or closed, as its opponents pretend – it means, on the contrary, making an effort to attain or maintain spiritual health. To give up reason is to invite mental illness and social disintegration. Taken to extremes, unreason would be a sure formula for insanity and social chaos.

Aristotle's answer to irrationality was effectively to train and improve our reason. I do not think this is "the" single, complete solution to the human condition – but it is for sure *part of* the compound solution. Logic is only a tool, which like any tool can be unused, underused, misused or abused. Logic can only produce opinion, but as I said before it helps produce the best possible opinion in the context of knowledge available at any given time and place. It is not magic – only hard work, requiring much study.

Rationalism is sometimes wrongly confused with 'scientism', the rigid state of mind and narrow belief system that is leading mankind into the spiritual impasse of materialism and amorality. On this false assumption, some people would like to do away with rationalism; they imagine it to be an obstacle to spiritual growth. On the contrary, rationality is mental health and equilibrium. It is the refusal to be fooled by sensual pursuits—or spiritual fantasies. It is remaining lucid and open at all times.

The 'scientific' attitude, in the best sense of the term, should here be emphasized. For a start, one should not claim as raw data more than what one has oneself experienced in fact. To have intellectually understood claims of enlightenment by the Buddha or other persons is not equivalent to having oneself experienced this alleged event; such hearsay data should always be admitted with a healthy 'grain of salt'. Faith should not be confused with science; many beliefs may consistently with science indeed be taken on faith, but they must be admitted to be articles of faith.

Note well that this does not mean that we must forever cling to surface appearances as the only and final truth. There may well be a ‘noumenal’ level of reality beyond our ordinary experience and the rational conclusions we commonly draw from such experience. Nevertheless, we are logically duty bound to take our current experience and reasoning seriously, until and unless we personally come in contact with what allegedly lies beyond. Those of us who have not attained the noumenal may well be basically “ignorant” (as Buddhism says), but we would be foolish to deny our present experience and logic before such personal attainment.

Wisdom is an ongoing humble quest. An error many philosophers and mystics make is to crave for an immediate and incontrovertible answer to all possible questions. They cannot accept human fallibility and the necessity to make do with it, by approximating over time towards truth. I suggest that even in the final realization we are obligated to evaluate our experience and decide what it is.

The phenomenological approach and inductive logic are thus a modest, unassuming method. The important thing is to remain lucid at all times, and not to get carried away by appearances, or worse still by fantasies. Even if one has had certain impressive meditation experiences, one should not lose touch with the rest of one’s experience, but in due course carefully evaluate one’s insights in a broader context. Logic is not an obstacle to truth, but the best way we have to ensure we do not foolishly stray away from reality. Rationality is wise.

22. Addenda (2010)

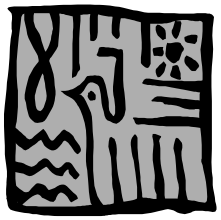
1. Concerning chapter 10, **on the Diamond Sutra's discourse**. Although its form is paradoxical, it seems intelligible. How is this to be explained? What is the underlying logic that makes people accept such discourse in spite of its formal flaws? I can answer this with reference to another instance of such discourse, inspired by the said sutra. In *The Zen Teaching of Huang Po* (pp. 64-65), we find the following discourse, as translated by John Blofeld: "The fundamental doctrine of the Dharma is that there are no dharmas, yet that this doctrine of no-dharma is in itself a dharma; and now that the no-dharma doctrine has been transmitted, how can the doctrine of the dharma be a dharma?" (Blofeld explains that he introduced the word 'doctrine' in place of 'dharma' to avoid the confusion of the original Chinese sentence.)

Why is this statement somewhat intelligible? Let me rephrase it a little (square brackets mine): "The fundamental doctrine of the Dharma is that there are no [verbal] dharmas, yet that this doctrine of no-dharma is in itself a dharma; and now that the no-dharma doctrine has been transmitted [wordlessly], how can the doctrine of the dharma be a [verbal] dharma?" In other words, the non-verbal dharma transmission *cannot* be replaced by a verbal transmission, such as the present words. Such words can merely talk about or somewhat describe the actual dharma transmission, but are incapable of being a substitute for it. Dharma transmission remains possible *only* non-verbally. As can be seen, the paradox arises only due to incompetent verbalization (if not a predilection for paradoxical statements). The underlying idea (that transmission of the mind of Zen can only be effectively performed wordlessly) is not paradoxical. It is quite intelligible (certainly there is no natural necessity that a mere description can do the job) and it can even be verbalized without paradox (as here done).

2. Concerning chapter 18, on dreams. How do **the contents of our dreams** arise? Most people regard that dreams are made up of re-churned memories of sensations, feelings, sounds, images and verbal thoughts, perhaps with a subconscious creative interference at the time of dreaming. In other words, the contents of dreams are partly dished out more or less fortuitously by the brain, and at the same time partly shaped by the dreamer through a half-asleep effort of his will. I do not find this traditional explanation entirely convincing. It is of course largely true, but I think that it does not suffice to explain the complexity of dreams.

Looking at my own dreams, at the variety and complexity of the actors and scenarios that appear in them, I am perplexed by the fact that they seem far more imaginative than anything I am able to produce when awake. My speculation is that there must be *some additional external input* – by telepathy. During sleep, I believe, we intertwine our thoughts with those of other people.

II. SPIRITUAL REFLECTIONS



"When I sit, I want to remain sitting forever."

(Shunryu Suzuki, p. 53)

Book 4. MORE MEDITATIONS

More Meditations is a sequel to the author's earlier work, *Meditations*. It proposes additional practical methods and theoretical insights relating to meditation and Buddhism.

It also discusses certain often glossed over issues relating to Buddhism – notably, historicity, idolatry, messianism, importation to the West.

1. Go directly and keep going

After preparing the environment for meditation so you will not be distracted, you sit down comfortably. As soon as you do so, remind yourself why you are doing so: your purpose is *to meditate* for the next hour (or whatever time you have decided) – not to dream or think of various things, not to fantasy, reflect, decide, plan or calculate. Remind yourself that meditation requires *a sustained effort of attention*; it is not an opportunity for letting your mind wander busily or lazily in all directions, or doze off.

I find this introductory resolve against mental agitation and dullness saves a lot of time, maximizing the time spent in actual meditation. If you resolve this from the start, it is relatively easy to keep it going.

Now, *go directly* to the contemplative mode. In principle, there is no need to resort to various artifices to connect with the mode of consciousness we seek. If we practice meditation regularly, and remain true to it in our everyday life, then as soon as we sit we can reconnect with the higher form of awareness we previously attained. The meditation then consists simply in sustaining that way of looking at things for the maximum amount of time. It is very difficult to describe in words the experience here referred to; you recognize it when you encounter it.

However, if your attention starts to lose energy and wander, or you find yourself at all mentally and/or physically restless or tired, you must for a while make use of some appropriate technique to focus your attention again. Certainly do not use such difficulties as an excuse to put off or stop meditating – but tell yourself that the difficulties are evidence of just how much you need to meditate. Redouble your efforts and keep trying.

If your mind's wandering is mainly visual – then try focusing it on some (mental or physical) visual object. If your mind is mostly absorbed in verbal thoughts – then try reciting some mantra (mentally or orally). If your body tends to fidget, rest your awareness in your body, feeling its discomfort or pain more attentively (without trying to relieve it). Alternatively, in all such cases, try more general means, such as focusing on your breathing or on the *chakras* (energy centers) along your central nervous system.

Use your judgment to find the best means to return your consciousness to its highest level. Experiment as necessary – but also persevere in such experiment, don't jump nervously from one technique to another. Remember, techniques are means, not ends in themselves. If you gaze at a candle, or recite a long deep "OM", or watch your breath in your nostrils and abdomen – the phenomenon that you focus on is of no great interest *per se*. It is just a way for you to avoid distractions and get to concentrate on your true object of meditation – which is the contemplative mode itself.

If I meditatively stare at a wall or concentrate on a sound, it is not because I expect to find 'reality' in that material or mental object. Such concrete objects are not themselves the key to the reality sought in meditation. Rather, what happens after sustaining such effort for some time is that another mode of consciousness appears, a mode in which particular objects lose their customary importance. Our concrete experiences become irrelevant, and the emphasis is rather on the consciousness itself. It is wide and deep; it is calm and secure. The self vanishes and the world bubbles on.

Consider seriously the idea that all mental and physical objects are like a dream or mirage – a projection of images, sounds and other sensations in space and time. Reality is what lies behind them, and these illusions act as veils in front of it. It is as if you are wearing transparent spectacles, in which images are optically reflected (or electronically displayed); these images capture your interest and distract you from seeing beyond or in-between them. According to this view, just as mental projections veil over physical objects, so do both mental and physical objects veil over ultimate reality.

Meditation consists effectively in learning how to look through that interfering curtain; gradually, it becomes more transparent and we get to see through it. Such meditation is just attentiveness, avoiding total seduction by appearances, remaining aware that the apparent may conceal more than it reveals. Whether sitting or in motion, we are mindful, watching out for any clue to what all experience really conceals and reveals.[250]

Another way to express what I refer to here as "going directly" is to use the horse and cart metaphor. The Zen master Nangaku said to Baso: "When a cart does not go, which do you whip, the cart or the horse?"[251] Clinging indefinitely to physical sensations or perceptions, or to emotional or mental experiences, is like whipping the cart. Rather, whip the horse – by tuning in to your intuitive awareness. This takes you straight to the core of meditation, relative to which all phenomenal experiences are a mere sideshow.

Forget the past; forget the future; forget even the present[252]. You become aware of a vacuum. Then just sustain that awareness. Sustaining does not mean clinging to some ideal outlook on things or experience – but pumping in energy, to renew moment by moment the meditative effort of increased consciousness. Sustain the cause, not the effect – for the effect may vary.

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250 In Kantian terms, we look out for the noumenal behind or above or beneath the phenomenal.

251 See S. Suzuki, p. 81.

252 This meditation advice echoes the more general advice in the *Dhammapada,* v. 348: "Leave the past behind; leave the future behind; leave the present behind". See also Bodhidharma (p. 75): "But sages don't consider the past. And they don't worry about the future. Nor do they cling to the present." Paramananda (p. 151) quotes a passage of the *Udana* in a similar vein, enjoining us not "to add" anything to our experience; the moment we but call the now "now" (or even just judge it so, wordlessly), we add to it.

2. Breath and thought awareness

To meditate is to make *a sustained effort to increase one's awareness*, or at least to prevent it from decreasing from a certain level; this defines what constitutes ***meditation***. This is to be distinguished from ***contemplation***, which is steady, effortless, stable awareness (or increased awareness, in comparison with some previous state). Contemplation is a goal of meditation. At some stage, meditation (an effort of awareness) becomes contemplation (effortless awareness).

There are many ways and means of meditation, of which two may be mentioned here.

In ***breath awareness*** meditation, we make an effort to watch the breath entering and leaving the body, patiently, without interfering in its speed or trajectory. Calmly and single-mindedly, fix your attention on the sensory receptors inside your nostrils (which are static relative to the movements of breath); and persevere in this attentiveness for a long time. At the same time, be mindful (from the inside, if only peripherally) of the rise and fall of your belly with every incoming and outgoing breath.

Experience one breath at a time. You cannot achieve mindfulness of breath in a mechanical manner, merely by initially deciding to watch your breath and then doing so for a couple of breaths. You cannot just launch breath awareness – or any other sort of meditation, for that matter – and expect it to carry on by itself. Your attention will in such case naturally float away at the first opportunity. Awareness is not something inertial – it demands effort.

Thus, to sustain your interest in the breath, engage one breath at a time. At the end of the first in and out breath, *remember* to make a new decision and effort to attentively follow the trajectory of next breath, and so on – one step at a time. This principle is applicable to all sorts of meditation (e.g. to walking meditation or to calligraphy). Even when one reaches the level of free-wheeling contemplation of one's breathing, feeling the emptiness within, one has to remain focused and not take things for granted.

In the words of Zen master Dogen: "the breath that comes in does not anticipate the breath that goes out"[253]. You remain mindful of things as they are, at their own pace. This mental will (or more precisely, spiritual will[254]) must be distinguished from the effort of breath control, which involves physical will (on the muscles of the nostrils, the diaphragm or whatever). It is more

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253 Dogen, p. 234.

254 Will (or volition) is a function of the self; its source or origin is not the colloquial "mind" (i.e. the phenomenal domain of memories, imaginations, thoughts, anticipations, dreams) but the soul (i.e. the spirit – a non-phenomenal domain of the psyche).

akin to the "presence of mind" (or again, more precisely put: presence of spirit, or spiritual presence) used in Tai Chi or Yoga[255].

If your breath is irregular in some way (whether ragged, uneven or however uncomfortable), the simplest way to calm it is to wait for it patiently to do so by itself (as it is bound to do eventually). If such waiting results in your forgetting to watch the breath, no matter – when you become aware of your loss of attention, just return to breath awareness. If you lack the patience to wait but want to do something about it, then count the breaths as they occur (whatever their speed and shape). But abandon words again as soon as possible, for they are ultimately a hindrance to progress.

In ***thought awareness*** meditation, we make an effort to watch our thoughts come, play out and go. This is again essentially a spiritual act, a willing of attention – to be distinguished from the effort of thought control, which involves willing one's thoughts to take shape, to go in a certain direction, or to stop. It takes a lot of practice to get to the point where one can sit back and watch one's thoughts flow without getting caught up in them and carried away by them; but, although the brain seems programmed to hinder it, such detachment is indeed possible.

Thought awareness is facilitated by body awareness, breath awareness and awareness of one's surroundings. When thoughts run wild, you can rein them in more readily if you increase awareness of the here and now. The thinker is suspended in a cloud, unaware of his physical existence or his surrounds: return him to earth. If the thoughts are overwhelming, ask them only for a little room in a corner of your mind – a place for monitoring thought. Then slowly expand this observatory's portion of the mind.

It would not be quite correct to say that one should just sit back and watch one's thoughts, as one watches one's breath. Breathing is not expected to stop (but only to calm down), whereas thoughts ought to eventually stop. Therefore, one has to use a certain amount of thought control, even while avoiding crude force. Paradoxically, true thought control is not possible without thought awareness; you cannot precisely influence what you are not sufficiently conscious of. That is to say, to succeed at fine-tuned control, one needs proportionate attentiveness. Therefore, meditation on thought is a cunning mélange of awareness and control, in measured succession, until awareness and control both reach their peak level.

At that stage, it is possible, not only to instantly stop thought by an act of will, but to sustain this interdiction for a long time. Eventually, even this act of will becomes unnecessary or unconscious, because we come to reside comfortably in inner stillness and silence. This is not the final goal of meditation, but merely an intermediate stage. Until now, thoughts were a distraction from deeper meditation; now, it becomes possible to contemplate the non-phenomenal self and its relation to phenomenal experience more precisely.

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[255] In Tai Chi and Yoga, movements are so slow that we get the time to follow them in great detail mentally. Ideally, one's breath should be equally gentle, to facilitate awareness of it. Similarly, when reciting a mantra, it is wise to utter is slowly (e.g. one in or out breath per syllable).

3. Self awareness

The philosophical idea of Monism is of utility to meditation. When the philosopher proposes that matter, mind and spirit must eventually be One, he/she does so because this theory seems like a logical conclusion from all the data of experience and thought. But for someone engaged in meditation, this idea has a more practical intent: it informs him/her that all common distinctions are ultimately unnecessary to meditation, even artificial impediments to it, since they disturb the natural rest of the psyche, i.e. they are psychologically pointless and fatiguing.

In truth, it is more accurate to say that the distinction between soul and mind-and-body is at first psychologically valuable, too, in that it allows us to focus on the non-phenomenal soul alone, while regarding the phenomena of body and mind as mere distractions relative to that object of meditation. Once this level has been mastered, and we become adept at strongly intuiting the self in the midst of mind-body events, it becomes wise to transcend all such separation, and view self-awareness as a distraction, too.

We may distinguish four senses or levels or types of "self-awareness" in the course of spiritual development:

a. The lowest form of self-awareness is that of the narcissist. Here one focuses on aspects of one's body and mind, of one's life and history, etc., that are either pleasing or displeasing, confusing this "ego" construct with one's self. This is a sort of egotistic and egoistic indulgence devoid of reflection, an unconscious and unintelligent existence.

b. At a higher level of self-awareness, one begins to look upon the preceding level with some degree of criticality. Here, one realizes that one's behavior thus far has been stupid and unseemly, and one makes some effort to improve and correct it. This is a start of spiritual consciousness, tending towards a more wholesome understanding of who one is.

c. In a later stage, one realizes the distinction between: the non-phenomenal soul on the one hand, and the phenomenal body-mind complex on the other. As this realization develops, and one dissociates oneself more and more from the body and mind, and one associates oneself progressively more with the soul – one's value system and behavior patterns are radically changed.

d. But even the latter evolution is not final, because the soul one identifies with there is the individuated soul, whereas one has to eventually realize the universal soul; or, as some prefer to put it, the non-soul (i.e. non-individual soul). Although the individual soul is already realized to be non-phenomenal, it is still restrictive in scope; only when such limits are transcended, one attains true self-awareness.

For monotheists, this last stage corresponds to full consciousness of God; for Buddhists, it signifies enlightenment, realizing the Buddha-mind or emptiness. Thus, meditation proceeds by broadening and internalizing consciousness, tending gradually towards a holistic consciousness and a deep understanding of self.

The problem of identifying with one's real self could be viewed as a linguistic problem, to some extent. When you feel pangs of hunger, do not think "I am hungry" but think "my body is emitting pangs of hunger"; or when you feel some emotion, do not think "I am sad (or happy)" but "my mind is manifesting waves of sadness (or happiness)". Likewise, in similar circumstances – use language with precision, or at least be peripherally aware of the more accurate description of experience. Avoid bad habits, and do not confuse linguistic shortcuts with phenomenological formulations.

4. Meditation on the self

Why (as is evident in the course of meditation) are inner and outer silence and stillness so difficult to attain? Because through our imagining visual or auditory phenomena (e.g. daydreaming or humming a tune), or indulging in emotions (such as joy and sadness, or physical feelings), or intending non-phenomenal thoughts (including attitudes, resolutions, likes and dislikes, and other postures of the will), or thinking verbal thoughts (mentally or out loud), or engaging in various bodily actions (in pursuit of sensations or other causes of mental events) – we are constantly *producing mind*.

This compulsive production of mental content could be considered as the main way we generate and perpetuate our ego (or false self). Without such mental furniture, the ego effectively disappears, leaving behind a gaping hole. That is, to even momentarily stop such mental production, achieving silence and stillness, is to come in contact with the underlying true self[256] sought in meditation.

All our inner and outer babbling and restlessness is, in this perspective, just a pretext to obtain and maintain the (illusory) comfort and security of having a more substantial 'self'. The insubstantiality and elusiveness of the true self seems somewhat frightening to us, and so we work hard trying to produce a more substantial and manifest expression or substitute.

Meditation on the (true) self is daring to venture out into the empty internal space of egolessness. It is the adventure of inner space travel, more daunting perhaps than outer space travel.

Rather than dismiss the self on ideological grounds (as some people do, wishing to seem profound or fashionable), it is important to meditate on the self. This meditation consists in observing how we actually regard our self.

The sense of 'I' or 'me' is perhaps first of all physiological – consisting of the inner and outer sensations I have of 'my' body, including touch sensations, smells, tastes, sounds and sights. At first, I naïvely associate myself fully with these sensations. I do not regard them as objects relative to some more central self; they simply *are* me. I cannot at first conceive of me as someone other than the person associated with this body, this face, this voice, this way of moving, and so on. It is only at a later stage, by means of intellectual reflection, that I can reject that instinctive view as inadequate. I may for instance argue that a person can lose an arm or leg, yet still remain the same person.

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256 This is often referred to by Buddhists as the non-self, or more paradoxically still as the non-existent self. But it would be more accurate to characterize it as the non-phenomenal self, to distinguish it from the phenomenal self (self in the sense of ego).

I may then look for my self within more psychological aspects of my experience. Most of us attach great importance to our emotions and valuations; they feel like true expressions of our deeper self. Our desires and fears, our joys and anger, and so on, all seem to intimately describe us. Yet, as we go through life, we may realize that all such self-expressions are not indispensable; we may change emotions, appetites and affections, yet still consider we are the same person somehow.

We may then seek to identify more precisely with our cognitions and volitions. By cognition, is meant the relation we have to apparent objects, whatever their status or nature seem. By volition, is meant the force through which we seem to determine physical actions (moving arms and legs, making facial expressions, etc.) and mental actions (imaginations, thoughts, valuations). But even here, if we reflect philosophically, we soon realize that although such acts may be expressions of some deeper self, they cannot be equated to it, because they noticeably vary in orientation and content.

The effective self must therefore be something more 'abstract'. But this abstraction cannot be in the way of a concept, **for a concept would not suffice to explain how I know myself to be the author of *particular* actions at a *given* time – a concept can only declare me the *occasional* author of *kinds of* actions**. Therefore this abstraction must be assumed and recognized to be something non-phenomenal that is directly experienced. Hence, the idea of apperception or intuition of self.

Once this idea is philosophically understood, as here explained, one can with an effort of attention, become more conscious of one's actual intuitions of self. These intuitions are generally present in everyday consciousness, but being very fine they require particular attentiveness. The most effective way to learn to notice the precise focus of self is in the course of sitting meditation, when one is maximally calm and contemplative.

Note well here: our knowledge of the self is direct and experiential; philosophical analysis only serves *to eliminate* inappropriate or incoherent views about the self, which interfere with our positive intuition of it. We intellectually disown what cannot logically be the self, so as to open the door to refined discernment of the self.

Thereafter, meditating on the self more precisely, one will at first identify it as the Subject of cognitions and the Agent of volitions (including valuations); this is an individual self. At a higher or deeper stage, if one perseveres in meditation and other virtues, one may realize and get to contemplate the universal self (or so we are taught by many traditions).

On the basis of the preceding insights, I would recommend the following as an effective meditation on the self[257]:

> *Turn your gaze on yourself; with eyes open, with eyes closed.*
>
> *Anything phenomenal you see, hear, sense or feel is not you.*
>
> *Think, without words: "this is not me"; move on from it.*
>
> *What is left? Look for yourself. Do you find anything?*

This meditation could be characterized as a 'method of the residue'. It consists in eliminating from consideration sensory or mental experiences that cannot rightly be identified with the self

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[257] This exercise is comparable in effect to the "original face" *koan*.

(since it is non-phenomenal); we are then left only with the intuitive experience of it. Practice of this technique increases one's sensitivity to apperception, teaching us to be aware of something always present in us to which we usually pay little attention because we are blinded to it by the more noticeable phenomenal percepts.

5. Various remarks on meditation

Attention and intention. Cognition may be said to have two aspects: *attention*, the experiential, receptive aspect; and *intention*, the rational, active aspect. Thus, perception and intuition are attentive, whereas conception, proposition, argument and evaluation are intentional. Both of these cognitive acts involve an effort, i.e. some willpower by the one cognizing (the Subject); but the volition involved is different in each case.

The effort of attention is twofold – an effort to cognitively adhere to some object(s), and an effort to avoid distraction by other objects or purposes. Thus, this effort has both a positive component and negative component; its Agent (the Subject) is in a sort of tension: pushing in one direction and pulling in an opposite direction. The effort of intention is likewise or even more complex, involving diverse mental projections and manipulations, and sundry acts of will and valuation.

Meditation tends towards pure cognition – that is to say, cognition without volition. This means that when we meditate, we gradually diminish intention and opt for attention; moreover, our attention slowly becomes effortless, i.e. we become established in it in the way of a natural place to be. At that stage, there is no paradoxical tension between cognition and volition, and we are peaceful observers. This is called contemplation.

In the context of meditation, everything is merely part of the scenery. You may feel pain somewhere, or some impatience may unsettle you, or many thoughts may assail you – but you remain unaffected. You do not cling to passing sensations, feelings, imaginings or discourses. You transcend all such phenomena, and focus on the here and now. You remain aware and conscious; you maximize such alertness and mindfulness.

The crux of meditation is presence of mind, or more accurately put *présence d'esprit* (presence of spirit). That is to say, meditation is generating self-awareness; it is being aware of your self – being fully present as a self (spirit, soul), while sitting or moving. This does not mean to say being and doing "self-consciously" (artificially, awkwardly), but is to be contrasted to being and doing "unconsciously", i.e. performing absent-mindedly, without mindfulness.

The nature of mind. An outcome, or the outcome, of meditation has been described (using Buddhist terms) as knowing or resting in "the nature of mind". This somewhat cryptic phrase seems to mean: "what mind really is".

Thus, enlightenment is or comes about through lucid awareness of the mind or mentality as such *as it naturally is*, i.e. its essential character whatever changes occur; or it consists in

recovering the *natural state* of mind, i.e. the spiritual position or posture in which consciousness is effortlessly full and optimal.[258]

The superlative consciousness concerned is moreover described as the "ground of consciousness" or "pure consciousness". By this is meant that it is always present in the background of or underlying all ordinary consciousness – only, we must be sufficiently alert to notice it. Meditation is thus an effort to awaken consciousness to what is already present, rather than an attempt to produce something absent.

Furthermore, this way of viewing is said to be "non-dualistic". As used in Buddhism, the expression "dualistic" seems to refer to our tendency to oscillate between yes and no. Some say: "it is", others contend: "it is not"; today I think: "it is", tomorrow I may think: "it is not". This sort of fatiguing decision-making seems to aim at finding out the truth, i.e. reality – but in fact (according to Buddhists) it distracts us from what is already evident right under our nose.

Another interpretation of non-dualism is made with reference to the Subject and object of consciousness. Ordinarily, we distinguish these three aspects of any event of appearance; but in enlightenment, we are told, this distinction disappears and all existence seems like one thing. Subject (i.e. that which experiences), object (i.e. that which is experienced) and the consciousness relating them merge together into the single and unique One. Thus, meditation is often described as a way to get away from dualistic thinking.

Subject and object as one. Actually, I have experienced something close to such unification of subject and object in meditation. What one experiences is not so much the subject becoming the object or vice versa – it is not an equation of individual things, as the wording might lead one to think – but rather the impression that the whole field of one's awareness (at that time, 'here and now') is a single, continuous event. In this single field, the sensations of one's body (which are powerful components of one's sense of separate selfhood) are experienced as being objects just as any sight or sound one is currently experiencing. Simultaneously, everything in this field of awareness is experienced as imbedded in one's consciousness of it, including 'oneself' (which in this context has no particular location).

Evidently, in such a state of consciousness, the idea of self becomes more diffused, or may disappear or even be forgotten. We no longer feel the ordinary strong attachment to the bodily sensations and mental impressions; these are all seen and felt as mere little bubbles of experience in the unitary field of awareness. All thoughts, worries, pleasures and the like appear as momentary attention-grabbing events in the essential unity of experience. Thus, the various components of the false self lose their weight, and the apparent self is seen not to be the real self. What we ordinarily cling to as our self is understood to be an illusory self with a particular location, not to be confused with the more all-embracing real self.

With this positive experience in mind, it is easier to understand seemingly paradoxical statements made by Zen masters and others, to the effect that the self "both is and is not" or "neither is nor is not". The illusory self is indeed experienced in ordinary consciousness, but in a higher state of consciousness it is seen not to really be the self, i.e. to be an illusory appearance. Thus, it is and it is not – it is phenomenally, but it is not 'noumenally'. This

[258] The masters insist that this experience is "nothing special". Enlightened mind "is" ordinary mind and vice versa; they should not be viewed dualistically.

simply means that the intuited self is more real than the phenomenal self. Moreover, the real self cannot properly be said to be or exist, because it does not exist in the way of a delimited individual entity, but in a more diffuse manner underlying all consciousness. However, it cannot be said not to be or exist, because there is indeed something there that experiences and wills and values. Thus, it neither is nor is not.

Cultivate a sense of wonder. In sitting meditation (zazen or other ways), we encounter our spirit (or soul), in relation to mind (at an early level of meditation, when thoughts and fantasies are still present) and then alone (when mind is transcended). In moving meditation (such as the *kinhin* walking meditation, Tai Chi or Yoga), we experience the ability of spirit to move matter as well as mind.

One should always reflect on the miracles of consciousness and will; these powers of ours, however limited in scope, should never fail or cease to fascinate us. Our spirit is not divorced from mind and matter, but interacts with them. Somehow, cognition shows us some things, while volition allows us to affect some of them.

Through volition, we have some degree of power, not only over our mind, but also over our body. Volition is a causal relation between spirit, on the one hand, and the mind and body complex it animates, on the other (although we colloquially describe this, imprecisely, as "mind over matter").

By cultivating a sense of wonder in regard to our possession of consciousness and will, we can learn *to steady and concentrate our attention on consciousness and our energy in will*, which efforts are the essence of both sitting meditation and moving meditation. These are the most direct means to ever deepening self-understanding, and self-mastery.

We should also be constantly aware of the powers of mind and matter over our spirit – that is to say, how these domains may (causatively) affect and/or influence us. Affecting means something causing, while influence refers to *the experience or idea of* something causing. In either case, causation (determinism) is involved; but in affectation the cause directly has its effect on us, whereas in influence, the same cause has its effect on us indirectly, *via* our awareness of it to some degree.

We should also in this context note the powers of different individual souls to affect and influence *each other*, at least through the medium of matter and mind (physical force, verbal discourse, etc.), and possibly even (keeping an open mind on this issue) more directly, by means of telepathy and telekinesis.

Meditate instead of thinking. Most of us, most of the time, use thought as a sort of self-entertainment. We find it hard to bear idle moments, and use thought as a distraction to furnish our minds. Many of us regard having a blank mind as a waste of time, and feel obliged to occupy our minds with thought. If we are at the toilet, driving a car or waiting in a line, we keep busy thinking, unable to stay quiet inside. If other people are around, we may chat with them, engaging as it were in collective entertainment.

Instead of thus using thought as a pastime or mind-filler, use meditation. Meditation can occupy you just as well, and at the same do you good. Thus, in everyday life, whatever you are

doing, try and get into the habit of meditation: consciously feeling you body, watching your breath or your thoughts, mindfully reciting a mantra or a psalm, etc.

To meditate, one has to remember to meditate; so this effort of memory is primary. When you sit down to meditate, always remind yourself that you are sitting down to meditate, and then keep reminding yourself of that intent when you find your mind straying. If you sit without such conscious resolve, it will likely take you much longer to actually begin meditation.

Practicing meditation even after you get up from your sitting meditation will greatly improve your next sitting meditation, and is moreover a major goal of sitting meditation. Here again, even if you have generally resolved to practice meditation in everyday life, it won't happen if you forget your resolution. Therefore, remind yourself again and again.

Meditation on velleities. Self-knowledge is achieved by meditatively observing not only our thoughts and actions, but (more subtly) our *velleities* in thought and action. Velleity is starting but unfinished volition. Often, we are unaware of our own valuations. But we can discover them indirectly through observation of our velleities.

For instance, I express my desire for a girl I met by clinging to her image in my mind; or more forcefully, by imagining myself putting my arm around her and kissing her, and so on (progressively indulging in more detailed fantasies). This is a first degree of velleity – in thought. I may thereafter choose to put these thoughts into action. For example, I may communicate my desire to the girl by chatting her up and eventually offering her a light kiss, and observing her reaction (whether she draws back decisively or lightly kisses me back). This is velleity in action; it is a tentative exploration that may end up with a full commitment to the desire.

During meditation, and in life in general, one should be alert to such less than explicit mental and physical activities – and not focus exclusively on the more obvious events.

Meditation as alchemy. We should not, out of a desire to universalize meditation, forget its ethical aspect, i.e. the fact that it improves individuals, makes them more virtuous, orients them to higher values. I have in mind, when saying this, certain sublime Buddhist teachings, but it is obviously a more general truth.

- Manifold desires, sexual lust, power lust, greed for money and belongings, dependencies on people or on substances, bad habits, compulsions, obsessions, and all other forms of attachment and "selfishness" are slowly turned into non-attachment and unselfish helpfulness.
- The anger and hatred, the coldness and enmity, which emerge from the actual or potential frustration of desire, are gradually replaced by serenity, loving-kindness, warmth and peacefulness. When one is essentially content and secure, one is never lacking or afraid, impatient or short-tempered.
- Ignorance, delusion and foolishness eventually become enlightenment, liberation and wisdom. The source of desire and frustration is a fundamental ignorance; it is a tragic error at the very beginning of our existence, by which we misapprehend its true nature.

> We then attach to the surface of things, and fail to notice their deeper unity, and thus get sucked into the vortex of samsara.

Meditation is a sort of alchemy, a cauldron wherein gross materialism is transmuted into spiritual purity and elevation. Its ultimate purpose is to return us to the nirvana that is our natural heritage.

Poetry in motion. In the *individual* practice of a Tai Chi form, an attitude I find valuable to adopt is that of a wave of water in motion. I imagine my whole body as a wave of seawater, swelling, flowing, ebbing, moving back and forth continuously every which way, twisting and turning, suspended momentarily then breaking onto the rocks at the shore, pulling back, sweeping round from another direction, pounding the rocks again, on and on, without end, never quite repeating the same move, always sticking close to the rocks, enveloping them, caressing them, wearing them down. Nevertheless, all movements should be very slow and conscious.

When *fighting* an actual adversary (or many), I do not view him (or them) as represented by rocks, because rocks are too still and tough. Rather, I view the opponent as a swimmer in the sea that I am. I imagine this bad swimmer desperately trying to stay afloat in the rough sea of my Tai Chi. The waters surge all about him, drag him down into the depths, throw him up in the air, turn him this way and that, never leaving him the time to breathe or rest, till he finally gives up and thankfully drowns.

This self-image of water in motion is very valuable in Tai Chi training or combat, because it well induces in us the full and empty, the continuity, elasticity and reactivity, the inevitable power, the adhesion, and many other such characteristics of masterly Tai Chi. In some circumstances, this water might become even more insubstantial, and we identify rather with a cloud of smoke – something elusive, ungraspable.

The Tai Chi master Yang Ch'eng-fu used the same image when he wrote: "If the ch'i is not blocked it is like the sea wind which blows up waves and billows. … The whole body is as one ch'i."[259]

Such holistic approach to Tai Chi is greatly enabled by the regular practice of sitting meditation. The mind must be empty of distracting thoughts to be capable of assuming such watery identity; and it must be capable of sustained concentration to make the image last for an hour or so. The body must be profoundly calm before it can muster the energy of a flowing wave, an irresistible tsunami.

Moreover, meditation gives us maximal sensitivity to the states and intentions of the opponent, so that we can judge his condition and predict his next moves correctly.

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[259] See Wile, pp. 102-103.

6. Mental health

Just as our physical health is defined with reference to the human body, and its various members, organs and systems, as the optimum condition and function of that body – so in the case of mental health. Mental health is ***the optimum condition and functioning of the psyche***.

The psyche, the subject-matter of psychology, is of course a very large concept. It includes to some extent the body, since our mental life is largely psychosomatic, and since the body is the substratum of the so-called mind; especially, our mental health depends on the healthy condition and functioning of our nervous system, including the brain and the sense organs. On a less physical level, the psyche has two main domains, the spiritual and the mental (in a narrow sense of the term).

By the spiritual domain, I mean the soul, and by the (narrow) mind I mean the mental phenomena that occur (as it were) around the soul. With regard to those mental phenomena, they are perceptible (to various degrees) things or events, like thoughts, dreams and emotions. They are, strictly speaking, outside the soul. They can be experienced and manipulated by the soul, but their existence depends on the nervous system too; and indeed, sometimes they are entirely products of the nervous system.

The soul is the true self, that which constitutes a person within us. The soul may be active or passive relative to mental phenomena and relative the physical aspects of the psyche (i.e. the nervous system). The soul itself has three obvious faculties[260] or powers, namely cognition (intuitive, perceptual, logical and conceptual), volition (our will) and valuation (our values). The core issue in mental health is the health of the soul, although the issue is wider than that.

Mental health refers mainly to the correct functioning of the three faculties of the soul. It has three components, corresponding to these three faculties. These are of course closely interrelated, each requiring both the others to function. Mental health has degrees. The degree of overall mental health is proportional to the degrees and combinations of degrees of health in these three areas of human endeavor.

- The faculty of cognition is at its best when it is well prepared and trained to know the surrounding world and how to deal with it. That is certainly true and important, but the main cognitive health issue is **self-knowledge.** This is achieved by introspection[261] and

[260] The term 'faculties' should not be taken to imply that the soul contains entities or departments – it merely refers to capabilities to cognize, to will and to value.

[261] Note that 'introspection' has a widening circle of meanings. The deepest level of meaning is the self *intuitively* aware of itself (i.e. of the soul), and of its cognitions, volitions and valuations. The next level is the self aware (perceptually and conceptually) of the mental phenomena in its mind (in the narrow sense), i.e. memories, imaginations, verbal thoughts, moods, etc. The third most superficial

self-observation in action. Without a lucid, profound and extensive knowledge of one's own inner workings (motives, desires, fears, emotions, capabilities, etc.) and outer behavior, one is bound to feel imprisoned or lost in strange territory.

- The faculty of volition, likewise, has to be maintained for maximum efficiency in dealing with mental and physical phenomena. But the essence of health in relation to it is **self-control** (in the best sense of the term, not implying oppression), i.e. getting into the habit of doing what needs to be done (energy) or not-doing what needs to be avoided (restraint). This is essential to self-trust and self-confidence. For it is clear that if one allows oneself to be at the mercy of every passing fancy, impulse, urge, obsession, compulsion, bad habit, one will soon experience great anxiety, for anything might happen anytime. Without discipline one becomes one's own worst enemy.
- The faculty of valuation is properly used when or insofar as one's values are conducive to life, to self-knowledge and to self-control. This may be called **self-value** (in the best sense of the term, not implying egoism or egotism, selfishness or vanity). Clearly, if one has twisted values, contradictory values, an inclination to perversion of some sort, and so forth, one will soon become confused and ultimately bring about one's own self-destruction.

Thus, briefly put, the three most spiritual aspects of mental health are self-knowledge, self-control and self-value. These are spiritual, because they concern the soul (or spirit or self), the core of our psyche or mental existence. When the Subject of cognitions, the Author of volitions and the Valuer of valuations is appropriately looked after, he or she is healthy and the rest follows. If the self's faculties are on the contrary neglected, the opposite occurs. We may thus speak of spiritual health – or in the opposite case, of a sick soul.

This is one aspect of mental health, its most intimate aspect. Of course, mental health does not only refer to how we take care of our soul, but to the full range of survival conditions and tasks. We need to improve our general cognitive abilities, e.g. by studying inductive and deductive logic, by being attentive, by remaining sober, and so on. Our capabilities of action will be improved by controlling our diet and our sex life, by staying physically fit, and so forth.

In short, without going into details, mental health relates to a wide range of inner and outer behavior patterns. It is therefore closely related to what we call ethics, the study of what is conducive to life. A person who cultivates mental health gets inner equilibrium and self-respect as reward, and achieves happiness, or at least basic contentment. Whereas the opposite person, sentences himself or herself to much inner conflict and self-contempt, and ends up suffering considerably.

Moreover, although the primary task of mental hygiene relates to oneself, this has a strong impact one one's social relations. That is to say, a mentally healthy person will naturally treat other people with respect and consideration, since that is the way he or she is used to dealing with himself or herself. On the contrary, a mentally unhealthy person will have many inter-personal conflicts, and suffer fear, anger, hatred, and similar negative emotions as a consequence.

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level of meaning is awareness (again, perceptual and conceptual) of its bodily phenomena, i.e. physical sensations, visceral sentiments, the sights of its body in different postures and positions, and so forth. All these levels are significant – but in ethical judgment, it is intuitive introspection that has the most impact.

Thus, mental health begets both dignity and decency. And inversely, mental sickness spoils life for self and others. Mental health is ennobling; mental sickness is debasing.

When one has mental health, the ongoing task is to maintain it and increase it. When one lacks it, the first task is to obtain it, i.e. to cure oneself of mental sickness. A very powerful way to obtain, maintain and improve mental health is *meditation*. Through meditation, one gets to really know oneself, gets to really take charge of oneself, and gets to really see for oneself what is good and what is bad in life, right and wrong in behavior.

7. Behold the mind

Judging by a collection of essays attributed to Bodhidharma[262], the latter's teaching of Zen meditation was quite introverted. He keeps stressing the futility of physical acts and rituals, and stresses the necessity of "*beholding the mind*", to achieve enlightenment/liberation. This message is repeated throughout the volume in various words. For instance:

> *Responding, perceiving, arching your eyebrows, blinking your eyes, moving your hands and feet, it's all your miraculously aware nature. And this nature is the mind. And the mind is the buddha… Someone who sees his own nature finds the Way… is a buddha."* (P. 29.)

The implication here is that buddhahood (ultimate realization) is not something far away, like the peak of a high mountain difficult to climb. It is something close by, attainable by a mere change of outlook. That is, the separation between samsara and nirvana is paper-thin: on one side, you are in samsara, and on the other, in nirvana. In his words:

> *Seeing through the mundane and witnessing the sublime is less than an eye-blink away. Realization is now.* (P. 113.)

The transition is not to be achieved by elaborate external deeds, but by acute attentiveness. Thus, he states:

> *People who seek blessings by concentrating on external works instead of internal cultivation are attempting the impossible*. (P. 95.)

Even so, in view of the ambiguity of the word "mind" the advice to behold the mind remains somewhat difficult to understand precisely. For "mind" (to my mind) in the largest sense includes every aspect of the psyche:

1. The *real self* (or soul or spirit), which stands as Subject of all acts of consciousness (i.e. awareness of any sort) and the Agent of all acts of volition (will) and valuation (valuing or disvaluing anything). This 'entity' is without phenomenal characteristics ("empty" in Buddhist parlance), and so intuited (apperceived) rather than perceived, note well.

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262 *The Zen Teaching of Bodhidharma*, consisting of four essays. Like the translator, Red Pine, I assume their author is indeed Bodhidharma; but who the genial author(s) is/are, is ultimately not very important: some human being(s) had this interesting teaching to transmit to us. I notice that D. T. Suzuki, in his *First Series* of *Essays in Zen Buddhism*, (pp. 178), mentions six (not just four) Bodhidharma essays as quite well-known and popular in Japan today. While acknowledging the Zen spirit of all those essays, Suzuki considers only two of them as likely to have been written by the first patriarch of Zen.

2. The *faculties or inner acts* of that self – viz. consciousness, volition and valuation. These intentional expressions of the real self are also in themselves devoid of any phenomenal aspects, and so intuited rather than perceived. Here, we must carefully distinguish between the *fact* (or relation) of consciousness and the *content* (or object) of consciousness[263], as well as distinguish the Subject who is conscious from the particular act of consciousness. And similar distinctions apply to volition and valuation.

3. The *illusory self* (or ego), a collection of body and mind phenomena that the real self habitually delusively (at least partly delusively) identifies with itself. This composite 'entity' includes a multiplicity of changing mental phenomena (i.e. mental projections, memories, imaginations, concepts, verbal descriptions, emotions) and physical phenomena (sensations, sense-perceptions, physical feelings), and is ordinarily confused with the real self. The ego is constantly crystallizing in our mental outlook, if we do not work hard to oppose this seemingly natural tendency[264].

4. The *physical infrastructure* of the psyche and its workings; i.e. the nervous system, including the brain, spine and nerves, the physiological characteristics of humans that are involved in sensory, motor and emotive functions. This is one sense or aspect of the term "mind" as colloquially used; it is sometimes the intent of the more specific term "unconscious mind". It is appropriate to refer to these physical structures and events as pertaining to the mind, insofar as they apparently constitute the interface between the material and the mental and spiritual domains; the mind is supported and fed by them and acts on the body and the world beyond it through them.

Note the difference between the last two of these factors of the psyche. The third refers to inner phenomena, a private subjective self-perception (which thereafter may have social ramifications), whereas the fourth refers to objective phenomena (knowable only from the outside, even for the body's owner).[265]

Now, when he recommends our "beholding the mind" Bodhidharma is obviously not referring to the third aspect of the psyche, the perceived (phenomenal) aspect; the ego is (rightly) the *bête noire* of the Buddhist.

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263 There is no awareness without content (i.e. object); one is here aware of another act of awareness whose content is in turn something else.

264 Meditation is precisely the most effective tool for overcoming our built-in tendency to ego formation. Even so, one may at any moment fall back into old ego habits; for example, the other day a young woman looked at me in a certain way, and I found myself flattered and captivated.

265 In this regard, it is important not to confuse the latter 'objectivity' with an exclusive standard of truth, as do certain modern "scientists". Such Behaviorism, advocated under a pretext of positivism or radical empiricism, is a non-scientific ideological stance that would more accurately be described as narrow or extremely materialist. It is epistemologically fallacious, because its proponents deliberately ignore a major portion of common personal experience (viz. introspective data), and formulate their theories on the basis of an arbitrary selection of experiential data (viz. physical phenomena). Really, what this anti-phenomenological doctrine signifies is that the convenience of certain low-level laboratory technicians is to be elevated to the status of a philosophy of mind! The psychological motive behind this doctrine is an ailment that afflicts more and more people nowadays: it is a deep personal *fear of introspection* – i.e. of confronting the mental and spiritual aspects of one's psyche.

He does sometimes seem to be referring to the fourth aspect of mind, the mystery of the mind's wordless power over the body; for instance, when he states that no deluded person "understands the movement of his own hands and feet," or more explicitly put:

> *…every movement or state is all your mind. At every moment, where language can't go, that's your mind*[266].

But mostly, Bodhidharma seems to be referring to either the first or to the second of the above-listed factors – i.e. to the intuited (non-phenomenal) aspects of the psyche.

> *If you can simply concentrate your mind's inner light and behold its outer illumination, you'll dispel the three poisons and drive away the six thieves once and for all. And without effort you'll gain possession of an infinite number of virtues, perfections and doors to the truth.* (P. 113.)

Sometimes, his emphasis seems to be on the real self; as when he writes: "No karma can restrain this real body" (p. 21), "Awaken to your original body and mind" (p. 31); "Your real body has no sensation, etc." (p. 39), or further (emphasizing the non-phenomenal nature of the real self):

> *The buddha is your real body, your original mind. This mind has no form or characteristics, no cause or effect, no tendons or bones… But this mind isn't outside the material body… Without this mind we can't move. The body has no awareness.* (P. 43.)

Sometimes, it seems to be on the acts of consciousness, and the related acts of volition and valuation, of that real self; for example:

> *Language and behavior, perception and conception are all functions of the moving mind. All motion is the mind's motion. Motion is its function… Even so, the mind neither moves nor functions, because the essence of its functioning is emptiness and emptiness is essentially motionless.* (Pp. 43-44.)

All this gives me the idea of a meditation consisting of 'awareness of awareness'. In this meditation, one focuses on *the one who is aware* (oneself) and/or on *the fact of awareness* (as distinct from its content). Whatever material or mental[267] phenomenal objects come to our attention, we simply ignore them and rather pay attention to *our being conscious* of them. The objects come and go during the meditation, but the Subject and consciousness endure and are focused on persistently.

It may be suggested that the emphasis ought to be on the awareness rather than on the one aware, for there is a danger in the latter case that one may get fixated on an ego representation of self rather than on the real self. Moreover, my experience is that meditative insight seems to hit a peak when the impression of self seems to disappear; one seems to face the surrounding world unburdened by an extraneous presence. Thus, even if the self is not really absent (since it is being conscious), it is best to behave *as if* it does not exist. For this reason, we should describe this exercise more narrowly as meditation on awareness.

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[266] P. 23. This makes me think of Tai Chi, which is a meditation on movement, on the relation between the mind and physical movement. Similarly in Yoga.

[267] In the narrower sense of 'mind' – referring to *phenomenal* events (memories, imaginations, dreams, verbal thoughts, etc.) only. Note in passing that the term 'mind' colloquially also often refers to the *mindspace*, the presumed extension *in which* mental phenomena occur.

Be mindful of the miracle of your being aware, or of your awareness as such, whether directed outward or inward. Bodhidharma says: "*Buddha* is Sanskrit for what you call *aware, miraculously aware*"[268]. The sense of wonder when observing consciousness is, he clearly suggests, essential to enlightenment[269]. Cultivate this wonderment. Don't take consciousness for granted, making it invisible to itself. Realize the marvel that one thing (you) can see another (whatever you look at, including yourself). Wow! How can such a thing be?

At first, such meditation requires effort; but one can eventually reach an effortless level of concentration that may be characterized as contemplation. Note well that the true object of such meditation on awareness itself is not phenomenal – it has no visual or auditory or tactile or gustatory or olfactory qualities. It is truly spiritual and purely immaterial, and is for this reason likened to a transparent empty space.

Of course, it is not much use to take note of one's awareness just momentarily; one has to persevere in that effort for some time. At the same time, one should beware of making this a "gaining idea"[270], i.e. of letting such effort become a distraction in itself. One cannot grab hold of results in meditation, but must proceed gently, with some detachment.

I have personally tried such meditation on awareness repeatedly lately, and it seems to be an effective way to discard passing perceptions, fancies and thoughts, and attain a more dilated and contemplative state of mind. Although I cannot yet claim to have had the lofty experience of beholding the mind that Bodhidharma recounts, I have found it worthwhile.

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[268] Verbatim from the present translation; on p. 29.

[269] It is interesting to note in passing how far this viewpoint is from the view of some Buddhists (more 'Hinayana' in outlook, perhaps) that Enlightenment is the actual *extinction* of consciousness (and volition and all other aspects of selfhood). For Bodhidharma (a 'Mahayana' teacher), the purpose of it all is to reach a summit of consciousness, not *un*consciousness. The difference is perhaps due to a different reading of the twelve *nidanas* doctrine (on the chain of causation of samsaric existence). According to that, the first three causes in the chain are ignorance, actions and consciousness; these clearly refer respectively to lack of spiritual understanding, acting in accordance with such incomprehension, and the narrow and delusive consciousness emerging from such action. It is not consciousness *per se* which is the problem (as some seem to think), but the *limited and limiting* consciousness of ordinary existence. The solution is therefore not the annihilation of consciousness, but its maximal intensification and expansion. Thus, consciousness as such is not a disvalue, but a value. (In accord with this divergence in interpretation, the Hinayana branch tends to regard Emptiness as nothingness, literally a negative, whereas the Mahayana branch stresses the positive meaning of it, as the "Buddha-nature" underlying all things.)

[270] Advice often given in his books by a modern disciple of Bodhidharma, Shunryu Suzuki.

8. The four foundations and the core practice

In practice, meditation on awareness has to be combined with four lesser meditations, which serve as takeoff platform and supporting pillars for the main intent. These four foundations (as I shall call them) are *body awareness, breath awareness, thought awareness and awareness of surroundings*.

At first, concentrate on your body:

- Posture: stable seat, straight back, stretched spine, chin down, shoulders back and down, open chest, stomach relaxed out, hands in the "universal mudra".
- Tonus: relaxed yet alert body, immobile without stiffness, no tension around lips and eyebrows, or in neck.
- Sensations: touch sensations on skin and inside the body, physical feelings and psychosomatic emotions, tastes in mouth, smells in nose, bodily sounds.

Next, become aware of your breathing:

- Let it go at its own pace; don't interfere with its speed or trajectory. If you find yourself breathing mostly through only one nostril, let it be, that's natural.
- Feel the air go in, follow it as far up your nostrils as it goes, then follow it down through your nose and out of it all the way. Again, the next cycle, patiently on and on.

After a while, notice your thoughts:

- Are you thinking in any way, whether through memories or imaginations of sights and sounds, through emotions, through verbal discourse, or through wordless intentions, decisions, plans, hopes, fears, and such? Just notice the fact, without classification or other comment.
- Thoughts may be voluntary, or impersonally produced by your brain (cerebral). The former require an effort, while the latter occur spontaneously. You may legitimately actively think for a while, to give yourself meditation instructions or learn lessons from current experience; but know when to stop that, i.e. stop it as soon as possible. As for involuntary thoughts (cerebrations), they may carry on as background noise throughout a meditation session, or they may calm down eventually; just watch them without encouraging them or getting upset by them.[271]

[271] Of course, it helps considerably to have a coherent lifestyle. In general, one should try to *limit one's sensory inputs* to a minimum. If one lives in very exciting circumstances, one will naturally be

- Allow thoughts to run a bit, but keep them on a short leash. You don't want them to take control of you, but you cannot take control of them in a violent manner. Rather, let them pop up for a moment, but do not let them run wild: bring them to heel at the first opportunity and maintain mastery.

Now, pay attention to external stimuli, the context you are in:

- The sights before you. Ideally, you are facing a wall or some natural scenery, so that what you see does not stimulate thoughts, but rather can be used to divert your attention away from your thoughts. To look out has a steadying effect. If your eyes get tired (they feel hot, red), just shut them for a while, and instead look inwards.
- The sounds around you. Sounds made by your family or neighbors, mechanical sounds in your home, sounds of traffic in the city, sounds of water, birds and insects in the country. Hear them all with equal attentiveness; they usually disappear eventually. They too can be used to counterbalance thoughts.
- Other sensations. The breeze or sunshine on your face, the air temperature, the smells around you, and so on.

These four meditations are merely foundations for the fifth, main meditation, which is meditation on awareness, remember. The four foundations are material or mental[272] (perceptual and/or conceptual) meditations, whereas the main meditation is a purely spiritual (intuitive) one. However, awareness of awareness is not possible without some prior awareness of something other than awareness; hence, those prior meditations. But don't get stuck in the preparation: do go on and make the extra effort of meditation on awareness!

Thus, we here propose a meditation program or package. One begins with the four lower meditations, giving one's full attention to each one in turn, and then learning to do them all in rapid sequence or at once (more or less). Every so often one returns to each of them in turn: checking one's posture is in order, assuring contact with the breath, verifying one is not involved in runaway thinking, and anchoring oneself in one's surrounds.

When one feels ready, one changes gear and begins the meditation on awareness. This becomes one's main focus; but even so, one remains peripherally conscious of the four foundations at all times. On average, let us say (without intending statistical precision) that the main meditation will take up 60% of one's attention, while the four lesser exercises will take up 10% each. Thus, although the meditation on awareness is the core practice, the four other meditations ensure one gets to it and stays on course[273].

Meditation on awareness is a sophisticated form of meditation on the here and now. The four foundations center us in the here and now of body-mind and surroundings, while the core practice takes us deeper, into the here and now at the spiritual level. It is introspection par

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assailed by numerous flashy and noisy thoughts, and one's mind will require a lot of work to calm down. For this reason, many seekers become hermits; it just makes meditation so much easier! In any case, a serene lifestyle is essential.

272 I use 'mental' here again in the narrower sense of the term.

273 When thoughts run wild, as often happens, make every effort to focus on the other three foundations, with the emphasis on breath awareness. The latter is crucial to steady *zazen*.

excellence. It is what Lao-tzu has described as[274]: "There is no need to run outside for better seeing… rather abide at the center of your being."

Note that to be here and now, one should always peripherally be alert to moments when one is *not* here and now. Ideally, one should focus wholly on the here and now. But in practice, one often swerves away from it, carried off by passing sensations, emotions and thoughts. Successful meditation depends on one being quickly aware of such moments of distraction, when one is no longer focused on the present tense. As soon as one notices such change in direction of consciousness, one should gently pull back one's attention where it belongs. Thus, awareness of the here and now has two components: a positive one and an equally important negative one; both are needed to stay the course.

Consciousness of consciousness is experienced as consciousness within consciousness. That is, one is adding awareness to awareness, intensifying one's attention as much as one can. This practice of mindfulness should be carried over from sitting meditation to everyday life. Every sensation, every motion, every intention should be lived with erect attention, as if one is about to perceive in it the secret of all existence. This is, I think, what Bodhidharma prescribes in order that we "behold the mind".

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274 According to Bynner's translation of the *Tao Te Ching* (v. 47).

9. Transcending suffering and karma

Bodhidharma makes clear that causes within this world cannot produce effects outside it; the Absolute can only conceivably be reached independently of the relative. Thus, the key to overcoming suffering and its underlying bad karma is not to be found in external rituals and deeds aimed at merit, but through an internal change of mind.

He insists that "invoking buddhas, reciting sutras, making offerings observing precepts, practicing devotions, or doing good works" are useless; only by "seeing [your buddha-] nature" can you "attain enlightenment". As he explains:

> *If you attain anything at all, it's conditional, it's karmic. It results in retribution* [i.e. reward or punishment]. *It turns the Wheel* [of karma]*... Unless you see your nature, all this talk about cause and effect* [i.e. acquiring religious merit] *is nonsense.* (P. 17.)

Thus, Zen meditation is not a way to change something, to annul our bad karma and its consequent suffering, but a way to awaken us to something that is already ever-present, something beyond karma, i.e. our "buddha-nature". This is liberating, for:

> *Once a person realizes his original nature, he stops creating karma* (p. 41). *That which is truly so, the indestructible, passionless dharma-self, remains forever free of the world's afflictions* (p. 93).

It follows that: "The essence of the Way is detachment" (p. 47). In his *Outline of Practice*[275], Bodhidharma describes how this spiritual path is treaded. He refers to "reason and practice". By reason, he means meditations that "turn from delusion back to reality"; while by practice, he means: "suffering injustice, adapting to conditions, seeking nothing and practicing the Dharma" (p. 3)[276]. All four of these practices are about detachment, or non-attachment.

1. "*Suffering injustice*": when you encounter some hardship that seems unfair to you, tell yourself that somewhere in your history (it does not matter just where) you

[275] This essay is also reproduced (differently translated) in D.T. Suzuki's First Series of Essays on Zen Buddhism (pp. 180-183), under the name "Meditation on Four Acts". Suzuki considers it probable that this essay was indeed written by the master. Moreover (pp. 183-186), he shows clearly how it was derived, sometimes word for word, from the earlier *Vajrasamadhi Sutra*. But he goes on to show the novelty in Bodhidharma's presentation, which made the latter's version a specifically Zen document.

[276] At first sight these "four all-inclusive practices" seem intended to parallel the Buddha's "four noble truths", viz. the fact of suffering (i.e. that existence is suffering), the cause of suffering (it is due to attachment), the cure of suffering (removing the cause, becoming unattached), and the way to the cure (the prescribed eightfold noble path). But while the two sets are obviously associated, they are not identical. The Buddha's foursome consists of three descriptive items and one prescriptive item; whereas, Bodhidharma list is altogether prescriptive (with three negatives and one positive).

must have deserved it somehow. In this way, you neutralize the suffering that believing you are being unjustly treated gives. You transcend the academic and fatiguing issue of justice or injustice, and remain internally unaffected by relatively external circumstances.[277]

2. "*Adapting to conditions*": this does not refer to external adaptations to conditions, but again to an attitude of willingness to make do with any currently existing conditions or eventual changes of conditions. In this way, one is not at the mercy of favorable or unfavorable circumstances, but remains at all times mentally (i.e. more precisely, spiritually) prepared for and able to cope with whatever life dishes out.
3. "*Seeking nothing*": is a virtue based on the realization that you open yourself to negative experiences when you are dependent on positive experiences. Everything in this world that appears desirable comes together with other things that are undesirable. You may for a while find satisfaction in certain people or possessions; but sooner or later, these will turn into less pleasant experiences, since all things are impermanent. All data considered, it is more pleasant to remain aloof and serene.
4. "*Practicing the Dharma*": seems to refer to altruistic attitudes and acts. But even here, non-attachment is stressed, in order that egoism or egotism does not result from them. The aim is to transcend the distinction between self and other, to work for the good of all.

Thus, these four practices can be described as different forms of non-attachment. Not getting worked up over one's supposed deserts; not preferring this to that, but being well able to deal with whatever comes; not pursuing sundry material and social things, thinking foolishly that one will find happiness by such means; and, on the positive side, being helpful to others.

Non-attachment saves one and all from suffering. It is attachment that ties us to karma and causes us to suffer; by non-attachment we immediately transcend this finite world and get to live our life from the infinite perspective of our buddha-nature (i.e. in nirvana). This buddha-nature is, of course, empty "like space"[278].

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[277] Note that I (unlike Bodhidharma) do not believe that universal justice necessarily exists. I agree however that one should strive to be as indifferent to the issue of justice as one can, because to get locked up in such concerns is definitely a spiritual retardant. Notwithstanding, the pragmatic wisdom of unconcern with justice for oneself ought not be taken to imply that one should be indifferent to justice *for others*. The latter concern would fall under the fourth heading here, that of "practicing the Dharma". One should obviously neither afflict other people with unjust acts, nor (as far as possible within one's power) allow third parties to so afflict them.

[278] P. 43.

10. Behold the soul

Although Bodhidharma, as indicated earlier[279], seems at times to refer to a self in the sense of a soul, we can safely presume that, as an orthodox Buddhist, he did not literally believe in a soul. If asked who or what is beholding the mind, he would probably have answered 'the mind'. Therefore, when I here bring up the question of soul again, I do not mean to impute such belief on him, but merely speak on my own authority as an 'independent' philosopher.

As also earlier indicated, I do agree that it is wise *not to* directly meditate on the self in the sense of soul. The reason being that it is easy for us unenlightened people to confuse our real self with our illusory self. The illusory self is so overwhelmingly present to our consciousness that we cannot easily ignore it. Thus, while hoping to soar meditatively, we may easily get bogged down in a low level of consciousness!

For this reason, I suggested that in our attempt to "behold the mind" we meditate on the fact of our awareness rather than on the person being aware. This is, I think, valid in the early stages of the meditation, at least, till we reach a relatively high level of consciousness.

But since I have reason to believe in the existence of a soul, I must consider such meditative restraint to be a temporary "expedient means", rather than an absolute no-no. It seems therefore legitimate to now suggest that, once one has reached a certain degree of peace of mind and meditative intensity, one may well turn one's attention on one's self in the sense of soul.

This, then, would be a sixth aspect and latest stage of our proposed meditation on awareness: eventually becoming aware of oneself being aware. One should do so, not only because awareness is logically inconceivable without someone being aware, but also because this true sort of self-awareness is indeed subtly present in all our exercise of awareness, in everyday life and during meditation, and ought therefore to be acknowledged and concentrated upon.

To summarize: Bodhidharma's advice to "behold the mind" seems vague and impracticable, in view of the ambiguity of the term "mind". Of the various senses of the term, he probably meant 'the fact of consciousness' and/or 'the one being conscious'. Granting which, his advice was, more precisely put, to *behold the beholding* and/or to *behold the beholder*. I suggested, to avoid developing ego, to begin by the first of these types of awareness, and at a later stage attempt the second.

The Buddhist idea of a "non-self" (*anatman*) being at all aware is, to my mind at least, logically unthinkable. Such so-called non-self is tacitly reified, even as it is claimed null. To

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279 In the first section of the present chapter.

say we have no real self at the core of our consciousness (and volitions and valuations) is to imply us to be mere inanimate objects. To claim that something truly absent may be aware (and will and value) is to deny that certain objects have such power(s) specifically, i.e. while other objects lack such power(s).

To deny that "we" each have a soul, i.e. that we *are* souls, is to turn us into mere things, or more extremely, into nothings. It is then discursively inappropriate to use "we" (or any other noun or pronoun) – yet those who make such claims continue to use such language. They either are not aware of the paradox involved in doing so, or contradiction does not bother them.

Buddhists claim that at the moment of enlightenment, the self (i.e. the apparent real self, not to mention the more gross illusory self) is *extinguished*. They claim that enlightenment is, precisely, the occurrence and experience of such extinction of the self. After that, "one" exists as a non-self ("in" nirvana), if at all (i.e. not at all, when "one" reaches the final stage, *parinirvana*). But such ideas are logically impossible to defend.

For the question arises, how do *we* know about such extinction? Not from our own experience, since we have not yet become enlightened. Therefore, merely by hearsay[280]. If so, who told us? Buddhists claim: the Buddha told us (first, and then perhaps other teachers who attained *bodhi*). So well and good – but if upon attaining enlightenment his apparent (real as well as illusory) self was fully extinguished, then he was no longer there and could not report anything to us.

If, alternatively, he returned and carried with him the memory of his enlightenment experience, then he was not quite extinguished. For, to return, and to speak of some past experience, implies some sort of *continuity*, i.e. excludes true extinction (which logically implies a radical break with existence). In short, the very idea of an extinction of self being reported by a witness to us after the fact is paradoxical and untenable.

The idea of extinction can only be discursively accepted as a 'third party' hypothesis, a conceptual projection by some onlooker, a mere theory or speculation. It cannot *consistently* be upheld as a first person account based on direct experience of actual obliteration. This being the case, the strict Buddhist idea of a non-self does not withstand logical scrutiny, and must be firmly rejected. For there is a more consistent alternative postulate, namely that we each have a soul, that we are souls.

There has to be a residue of some sort upon enlightenment, else we would not know about it. This does not however mean that the residue is an ongoing individual self; it suffices that the residue be the grand common Self, of which every individual self is but a tiny spark artificially delineated by ignorance. When this illusion of separateness collapses, enlightenment occurs, the individual self disappears but its underlying universal personhood remains.

To show the logic of this conception of enlightenment, an analogy can be made with a raindrop falling back into the ocean. As soon as it plunges into the larger body of water, the

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[280] Hearsay of course has some logical value, but it does not constitute knowledge in the strictest sense. It serves to confirm a hypothesis, but cannot definitely prove it. For even if what the witness says he experienced happens to be absolutely true (in God's eyes, say), it does not follow that his sincere belief in it is logically unassailable; and even if it were, it does not follow that we (other people) can take his say-so as fact.

drop effectively disappears as an individual drop. The drop is immediately 'one with' the sea. Even so, it can conceivably, for a very brief while at least, be retrieved intact.

Similarly, the remnant of spiritual existence can initially report its enlightenment experience, although ultimately all its boundaries dissolve and it fully merges with its Source.

That Source we may call God, following our traditions. Buddhists would call it Buddha-nature, Buddha-mind or original-mind; Hindus would call it Brahman; and each other religion has its name(s) for it. The name is not so important, I think, as what the word is intended to refer to; I am not so concerned with religious traditions as with their underlying significance.

In truth, when Buddhists pursue liberation from the karmic world, they do not seek total annihilation, absolute death[281]. They rather seek something they call happiness or nirvana. It is an existence, a 'higher life' of some sort, though not one subject to the suffering of samsara. Nirvana is certainly something beyond, free of and devoid of all phenomenal characters and events; but that does not mean it is totally nothing, a nihilistic non-existence. It is, let us say, a purely spiritual existence (whatever that means).

Reaching such conclusion, I realize that my thinking on this subject is closer to 'high' Hindu philosophy (such as Advaita Vedanta) than to Buddhism. I can never accept the "avatar" idea, so pervasive in Hinduism (as in Christianity), the idea that God can and does incarnate in human or other forms. For me, as a rational philosopher, this is a logically untenable notion; the whole cannot become a part. But many ideas in Hindu philosophy are indeed profound and reasonable.

[281] If so, those who do not believe in rebirth could just commit suicide and be done with this world, without needing to meditate and change their behavior.

11. The Buddhist no-soul theory

One of the major and distinctive theses of Buddhism is the theory of "no-soul" – (or *anatta* in Pali, *anatman* in Sanskrit). This is part of a larger thesis that nothing has a real essence, the individual soul or self being here conceived as a special case of the concept of essence, i.e. as the essence of a person.

The Buddhist no essences doctrine arose in reaction to a thesis, labeled "Eternalism", which was apparently normative in Indian philosophy at the time, *that 'things' consist of eternal, unchanging 'essences', substantial and causally independent entities*. Similarly, with regard to the special case of souls.

The Buddhist no essences doctrine was based on the assumption that the belief in such "essences", including in particular the belief in souls (as the essences of our bodily and mental existences), is the root cause of our imprisonment in samsara (i.e. our fundamental ignorance and suffering), so that its abandonment would put us in nirvana (i.e. enlighten and liberate us).

There has been a theory very similar to Eternalism in Western philosophy, namely the "Monadology" of Gottfried Liebniz. This was of course an extremist ontological idea, due to a simplistic reading of predication as stating that the predicate is literally "contained in" the subject. That is, that whatever is predicable of anything must be "part of its nature", and therefore inextricably intrinsic and peculiar to it – so that the world is composed of a multiplicity of eternal substances each of which is an island onto itself.

Opposite such inaccurate philosophy, the Buddhist counter-theory would indeed *prima facie* appear to be a laudable improvement. But, I submit, the Eternalist theory serves Buddhism as a convenient philosophical 'red herring'. It is surely not the commonsense or scientific worldview (which are effectively ignored by Buddhism); and the Buddhist rebuttal constitutes another extremist position (in the opposite direction), which altogether denies the reality of any essences by allegedly reducing everything in the world to an infinite crisscross of mutual dependencies (the co-dependence or interdependence theory).

Although Buddhists would protest that their thesis is not the opposite extreme, viz. Nihilism, but a middle way between those two extremes, it is hard to see how we might reasonably not judge it as an extreme view. It is true that there are two, nay three, Buddhist positions in this context. One, attributed to the Theravada branch, of ultimately a total void (extinction in meditation); another, attributed to the mainstream Mahayana branch, of an ultimate original ground (an underlying universal spiritual substance of sorts, albeit one piously declared 'void' or 'empty'); and a third, claimed by Zen adepts, of neither this nor that, i.e. fence-sitting between the previous two positions (hence, more 'middle way' than them).

Of these three, the said mainstream Mahayana option would seem the least Nihilistic, in that it admits of some sort of real existence – viz. the existence of the "original ground". Logically, however, this Monist thesis (to which I personally tend to adhere) should logically be classed as an Eternalist philosophy of sorts, since the original ground is beyond impermanence. Impermanent appearances continuously bubble forth from it, but it is everywhere and ever one and the same calm fullness. Thus, the other two Buddhist theses, which are more clearly anti-Eternalist, can reasonably be viewed as Nihilist rather than middle way.

The commonsense view (to which most of us adhere, consciously or not) is rather noncommittal on such issues. It is truly a middle way, without prejudice. It does not draw any such general conclusions offhand. It neither reduces everything to independent substances nor reduces everything to mutually dependent non-substances, but remains open to there being perhaps a bit of both these extreme scenarios present in the real world, and other options besides. At a more scientific level, this common view becomes the "laws of nature" approach – the idea that there are various degrees of being and forms of dependencies, which (in the physical domain, at least, and possibly in the mental domain to some extent) are best expressed through quantitative formulas.

In such ordinary viewpoint, there seems to be some concrete 'substance(s)' in the world, but not everything is reducible to this concept. Furthermore, substantial things need not be individually permanent, but change is possible from one form to another. However, Physics does assume as one of its basic premises a law of conservation of matter and energy – i.e. that the total quantity of physical substance is constant. Moreover, that which is impermanent lasts for a while. Things that exist must exist for some time (some more, some less) – they cannot logically be so impermanent as to "exist" for no time at all.

Anyway, the concept of essence is certainly not, in our commonplace view, equated to that of substance. Essences are rarely substances, but usually structures or processes that seem to be generally and exclusively present in the phenomena at hand, and so are used to define them. Essences are usually *abstractions*, i.e. rational insights or concepts, rather than concrete percepts or objects of perception. Abstraction claims validity of insight without claiming to be literally within reality; though it depends on a Subject to occur, it in principle correctly interprets the Object. One cannot deny abstraction as such without resorting to abstractions – so such a skeptical position would be logically untenable.

In the Buddhist view, in contradistinction, the apparent or alleged essences of things are *conventional*, or even *purely nominal*, and souls are no exceptions to this rule. By "conventional" (and all the more so by "nominal") is here meant that we, the people who believe in essences or souls, project this idea onto reality, whereas reality has in fact no such thing in it. In Buddhist epistemology, people ordinarily use their mind conventionally (or under the bad influence of words) in this manner, projecting onto reality things that are absent in it.

How (we may ask) do we know that reality is not as it appears to the ordinary mind? We know this, according to this theory, through enlightened consciousness. Thus, Buddhist epistemology, while invalidating ordinary consciousness, affirms the optimistic idea that we can transcend it and see things as they are. This can, incidentally, be compared and contrasted to Kantian epistemology, which likewise claims our phenomenal knowledge to be imperfect, but distinctively puts the perfection of 'noumenal' knowledge beyond our reach. While this

theory of Immanuel Kant's is inconsistent with itself, the Buddhist theory is not so in that respect.

Still, note well the difference between ordinary 'abstractionism' and Buddhist conventionalism or nominalism. For the Buddhists, as in Kant, our minds *invent* abstractions without any objective support; whereas in ordinary rational epistemology, abstraction is *an act of rational insight* – i.e. it does record something objective, which is not a pure figment of the imagination.

In addition to the said epistemological explanation or rationalization of its no-soul thesis, Buddhist philosophers propose various ontological claims and arguments. According to them, all things, including apparent souls, lack essence, because they are impermanent and discontinuous. They say this can be readily observed, and that in any case it can be logically argued – as well as being evident to anyone who is enlightened.

With regard to observation, they claim (much like David Hume later) to have looked for a soul everywhere within themselves and never found one. The soul is therefore (to them) an illusion of conventionally minded people – who are deluded by their ego (bodily and mental appearances of selfhood) into believing that there is something (i.e. someone) at the center of all their experience and thought.

But we must note that this is of course not a pure observation of an absence of soul, but a generalization from a number of failures to positively observe a soul. The generalization of negation could be right, but it does not have quite the same epistemological status as a positive observation. There is nothing empirically or logically necessary about the no-soul claim. At least, not from the point of view of an unenlightened person; and it is hard to see how an enlightened person could avoid equal reliance on generalization.

Moreover, we can fault their inference and larger argument by pointing out that it is absurd to look for the soul in the phenomenal realm (i.e. with reference to perceived sensible qualities, like sights, sounds, odors, savors, tactile feelings, whether mental or physical), if the soul happens to be a non-phenomenal entity (something intuited, which has in itself no phenomenal aspects).

It is worth additionally clarifying that, though our soul is a non-material, spiritual substance at the center of a multitude of mental and physical phenomena, it is not their "essence" or defining character. Our soul is "us", our self – the subject of our cognitions and agent of our volitions and valuations. It is an intellectual error to try and identify us with things that are only associated with us. We are not one with or part of our minds and/or bodies, but something beyond them, though in their midst, cognizing and interacting with them in various ways.

With regard to impermanence, Buddhists apparently consider that, since our soul always has an apparent beginning (our birth) and end (our death), it is necessarily illusory. In their view – reflecting the general assumption, it seems, of ancient Indian philosophy, what is temporary (or passing) is necessarily illusory; only the permanent (or eternal) is real. Moreover, in their view, nothing is eternal – by which they mean, surely, that nothing phenomenal is eternal; for they certainly believe in the eternity of enlightenment or of the underlying "nature of mind" or "ground of all being" – even if they affirm this universal substratum to be ultimately "empty".

But this viewpoint can be contested. To be real is to be a fact, i.e. to occur or have occurred. How long or short this fact is or was or will be is surely irrelevant to its status as a fact. An

illusion is something that is or was thought to be but is not or was not. To identify reality with eternity and illusion with impermanence is to confuse two separate issues. I have never come across a convincing argument why such equations ought to be made. Surely, one can imagine eternal illusions and transient realities. Thus, we should consider that the issue of the soul's persistence, i.e. whether the soul is eternal or as short-lived as the body and mind evidently are, has nothing to do with its reality or illusion.

The Buddhist argument against the soul also appeals to the general idea of discontinuity, i.e. the idea that everything changes all the time, and so nothing can ever be pointed to as "one and the same thing" from one moment to the next. This idea is presented as an observation – but it is clearly a mere hypothesis, an abstraction extrapolated from an observation. Given the observed fact of change, one can equally well suppose that some sort of continuity underlies pairs of moments. Since all we actually experience are the successive moments, the issue as to whether some residue of each moment is to be found in the next is open to debate. Thus, to speak of discontinuity is already to *assume* something beyond observation.

Furthermore, even given a seeming discontinuity, we cannot draw a definite conclusion that there *really* is discontinuity – let alone that this is true in all cases. Discontinuity is an *abstraction* from experience; it is not a pure object of experience. Additionally, the concept of *universal* discontinuity remains always somewhat open to doubt, because it is an inductive assumption – at best, a mere generalization. Moreover, the internal consistency of this concept is unsure, since it implies a *permanence* of discontinuity across time. That is, if we regard abstraction as necessarily implying some sort of continuity (whether of the object or of the subject), the concept of discontinuity is self-contradictory when taken to an extreme.

This insight is especially pertinent in the case of the soul, which is here both subject and object. We could not possibly claim to know for a fact that the soul is discontinuous (i.e. a succession of discrete momentary souls), because such a statement claims for the soul to the ability to *transcend* discontinuity sufficiently to see that the soul is discontinuous. That is to say, to make such a claim, the soul (as subject) must be *present in the time straddling* two or more of its alleged merely momentary instances or segments (i.e. the soul as object). This is clearly a self-contradiction. Thus, the Buddhist argument in favor of the thesis that the soul is non-existent does not survive serious logical scrutiny.

Another Buddhist claim regarding the soul is that it is subject to "dependent origination" or "conditioning" – i.e. that its actual existence, as a unit of being, as a fact – is impossible in isolation, is only possible in relation to all other things (which are themselves similarly interdependent). However, this theory – that everything in the universe could only exist in the presence of everything else in the universe, and that a smaller universe (holding just one of those things, or some but not all of them) is inconceivable – is just a speculation; it is not proved in any way.

Moreover, we could again ask whether this theory is consistent with itself. If it is, like all sublunary things, something dependent or conditioned – and it surely is so, notably with reference to human experience and thought – how can it be claimed as a universal and eternal truth? Any claim that the relative is absolute seems paradoxical and open to doubt. There has to be something absolute to anchor the relative on. To claim everything dependent on everything else and vice versa is still to claim this big soup of interdependent things to be an

independent thing. And if this in turn is not an irreducible fact, something else must be. There is no way to be an absolute relativist!

The belief that something can be “both A and not-A”, or “neither A nor not-A”, seems to be the essence of all mysticism (in the pejorative sense). The claim to make no claim is itself a claim – there is no escape from this logic. To claim that everything is illusory is to claim this as a fact – i.e. as something that is not illusory. To claim there is nothing, no person, at the core of our being might seem superficially at first sight logically possible, i.e. not self-contradictory – until we ask just who is making the claim and to whom it is addressed. Inanimate objects are not concerned with such issues. A non-self can neither be deluded nor realize its delusion. Any occurrence of cognition, valuation or volition implies a self.

12. Buddhist historicity

Buddhism emerged in northeast India about 6th or 5th Cent. BCE. It did not, of course, emerge in a cultural vacuum. India already had a rich religious culture, based on the Vedas and Upanishads, which gave rise to other religions, notably the Hindu.

It seems to be historical fact that Buddhism was founded by a man called Siddhartha Gautama, though historians disagree as to the exact dates of his life; most of them, in India and the West, suggest he lived in 563-483 BCE, others, in Japan, suggest 448-368 BCE.[282]

Whatever the case, it seems reasonable to assume that Buddhism began with this single man's teachings, and over time expanded and evolved. It does not follow, of course, that all the stories that have come down to us concerning him are historically true, nor that all statements made in his name were indeed made or implied by him.[283]

More significant philosophically is the issue as to whether this man's claim of "complete enlightenment and liberation" is true or not. No historian can ever answer that question. It is not inconceivable that such a metaphysical experience and event is humanly possible, but it would be hard to prove or disprove it. The one claiming such "Buddha" status can only be truly understood and justified by another person with the same privilege; and all others can only take it on faith, or refuse to do so.

It is as with any witness – the witness was there and saw and heard what he claims; but others, who were not present, have still to decide whether or not to believe his say-so. His testimony supports but does not definitively prove the hypothesis. We have to take into consideration the possibilities that he misunderstood or deluded himself, or exaggerated or lied to impress or manipulate others, or that reports concerning him were or have become distorted. These things do happen, even today; and in olden days, the boundary between fact and fiction was perhaps more tenuous still.

Notwithstanding the speculative presuppositions, it seems fair for us to still conventionally call this man the "Buddha" (meaning the enlightened one). Insofar as the doctrine of Buddhism depends on faith in certain metaphysical possibilities, it must be regarded as a religion. Even so, it includes some very philosophical insights and discussions, and so may also be regarded as a philosophy.

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282 According to the Encyclopaedia Britannica.

283 The following illustrates of the inaccuracy of transmission of information by tradition: Dogen writes at one point (p. 242): "It has been twenty-two hundred years since the Buddha's pari-nirvana"; assuming this is not an error of translation or a typographical error, and considering this text was written in 1246 CE, Dogen was mistaken by some 500 years!

This philosophical tradition is very broad and varied, and subject to very divergent interpretations. I do not claim to know more than a small fraction of this field of study, but nevertheless feel justified in sharing my reflections concerning the little I do know. For a start, this could be viewed as a record of one man's gradual assimilation or rejection of Buddhist ideas. But moreover, I feel impelled to comment by virtue of the original and extensive logical tools I bring to bear.

> I have sometimes been criticized concerning my criticism of Nagarjuna's philosophy, through arguments that I did not exactly represent it. But my answer is always this: though I cannot vouch that my arguments are perfectly applicable to Nagarjuna's philosophy as it really is, I stand by my arguments with regard to their applicability to the ideas I presented under the label of 'Nagarjuna's philosophy'. From a philosophical point of view, my arguments are interesting and valid, even if from a historical viewpoint some issues may be left open. In any event, historians have varying interpretations, too.
>
> Philosophy is concerned with ideas, and the issue of who precisely proposed them and when exactly is not so important. A philosopher (X) may represent, analyze and criticize an idea, without having to be absolutely accurate as to whether his formulation of the idea is exactly identical to its original formulation by some historical person (Y). So long as we understand that it is the idea as here and now represented that is being considered and discussed, the account given is philosophically respectable. Historians may debate whether X's account corresponds exactly to Y's initial idea, and to what extent X's discussion is relevant to Y's philosophy, but this is historical debate, not philosophy.

Concerning the credibility of Buddhism, we may also ask questions from the specific point of view of Judaism (and its derivative religions: Christianity, Islam and their derivatives in turn). A crucial question would be: if the claim of Buddhism to enlightenment and liberation is true, how come such a major human breakthrough to spirituality was never predicted or mentioned in the Jewish Bible and later books? Another question would be: if the Buddha went so high, how come he did not meet or mention meeting God?

These are of course questions for those who choose to adhere to Jewish (or Christian or Moslem) beliefs, for the Buddhist would simply regard the failure of the Judaic traditions to foresee or notice the Buddha's attainment, or the failure of the Buddha to acknowledge God, as a problem of theirs and not of his.

Personally, I prefer to keep an open mind in both directions, and emphasize the positive teachings on both sides, rather than stress conflicts between West and East. It is a historical fact that different segments of humanity have evolved spiritually in different ways – and that may well be God's will. Our evolutions are still ongoing, and we may yet all come to an agreement. We can surely learn from and enrich each other, and the current historical phase of globalization can profit us all spiritually.

13. About Buddhist idolatry

I am comforted in my conviction that Buddhism is not originally and intrinsically idolatrous[284] after reading some of Mu Soeng's historical comments, like the following.

> *For the Sthaviras, the Buddha Shakyamuni was a historical personage—a great teacher but not a divinity. The Mahayanists, however, saw the Buddha as a transcendental principle rather than a mere individual in the phenomenal world.* (P. 19.)

This confirms that the deification of this flesh and blood teacher is a late event in Buddhist history – occurring a few hundred years after the fact. It should be pointed out and emphasized that such deification was logically *in contradiction to* the essential message of Siddhartha Gautama (the founder of Buddhism).

Why? Because the message of this teacher was that he, *a mere human being*, was able to transcend samsara (the domain of karma) and attain nirvana (the domain of freedom). If it turns out that this apparent man was in fact *not a man at all, but a "god"* intending or predestined to save mankind, then the practical demonstration of the possibility *for humans* of liberation from the wheel of birth and death would not have been made!

If, as later Buddhists depicted him, he was a god, then his essential existential condition was not comparable to that of a man, and it could well be argued that his achievement could not be replicated by other men. The whole point of his story is that an ordinary human being can by his own intelligence and effort, even without the supervision of an accomplished teacher[285], develop understanding and overcome all suffering forever. To change that story is to miss the point.

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[284] Note that my use of this epithet is not intended to disparage Buddhism as a whole or Buddhists in general. My concern over "idolatry" is of course an expression of my Jewish roots and values (starting with the first two of the Ten Commandments). I admit frankly that I find such behavior patterns silly and extraneous. Nevertheless, I also have great respect and admiration for the more essential Buddhist beliefs and practices. When I read the stories or writings of past Buddhist teachers, I am readily convinced they are great souls, deeply moral and profound in their spiritual achievements. Moreover, my opposition to idolatry does not prevent me from appreciating the artistic value of Buddhist statuary and temples, some of which (notably, Angkor) I have visited. Perhaps, then, we should say that Buddhism (like Christianity) merits respect *in spite of* the forms of idolatry (deification of people and worship directed at statues) that have become attached to it. Certainly, Jews at least should always remain vigilant and be careful not to get drawn into anything suggestive of idolatry.

[285] See the *Dhammapada,* v. 353: "I myself found the way. Whom shall I call Teacher?" The author (i.e. the Buddha, presumably) adds: "Whom shall I teach" – suggesting this attainment is not something that can simply be taught, like mathematics or English.

Some, of course, would argue that, though he was not a god incarnate at birth, he became "divine" upon attaining buddhahood, and more so at the end of his life (when he entered *parinirvana*). This scenario was also, however, a later interpretation of events, motivated by devotionalism.

> *…the rise of devotionalism in Mahayana. …around the time of the beginning of the common era, in north-western India, under Greek and Mediterranean influences, Buddha statues were sculpted for the first time. In early Buddhism, as in the contemporaneous Upanishad literature, we find that the idea of a personality cult was frowned upon. In ancient India the veneration of a holy person took the form of worshipping a memorial shrine* (stupa) *rather than a physical image.* (P. 91.)

Originally, Buddhism was not a religion of devotion, but of morality and meditation. It did not consist in worship of the Buddha (as a god or later still as God), or of a multitude of Buddhas, but in following his example (as a successful spiritual explorer and teacher). Moreover, the adoration of statues (as a specific form of devotion) representing the Buddha and other figures in the Buddhist pantheon was, it seems, a possibly separate and still later phenomenon.

It may be, as the above quotation suggests, that idolatry was not a religious behavior pattern indigenous to India, but one imported from the West. One might have assumed idolatry to have been an older cultural habit in India (in view of its ubiquity there today), but historians have apparently[286] not found evidence in support of such a hypothesis. However, it remains true that in regions of Asia farther north and east, Hindu or other forms of idolatry may have preceded the arrival of Buddhism, and that Buddhism merely accommodated them.

In this regard, we must probably distinguish the geographical movements of Theravada and Mahayana Buddhism. Mahayana Buddhism, being itself relatively more idolatrous from its inception, would merge more readily with preexisting local idolatries; whereas, Theravada Buddhism, although relatively less idolatrous originally, would rather begin by tolerating the local customs it encountered, by considering them as among the human foibles that it had to deal with to gradually effect liberation.

Here, we can quote Stephen Batchelor[287] with regard to Tibet in the ninth century, to illustrate the movement and adaptation of Buddhism:

> *Padmasambhava's presentation of Buddhism through the medium of tantric deities and forces struck a very sympathetic and receptive chord within the minds of the Tibetans. The subsequent widespread popularity of tantric practice can probably be attributed to the innate spiritual disposition of the Tibetans to respond more readily to religious truths that are embodied and personified. In this way the teachings of Buddhism came alive for the Tibetans and ceased to be mere abstract ideas and doctrines.* (P. 48.)

Each people or culture, at a given time in history, has its particular spiritual predispositions. These will somewhat determine what they will accept in the way of imports, and how they will

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[286] According to Mu Soeng's account. Note that in my *Buddhist Illogic*, chapter 10, I assumed that the worship of statues in India antedated the advent of Buddhism. In any case, idolatry is a wide concept not limited to the worship of statues. It includes all forms of polytheistic worship, and even the idea of an incarnation of a unique God. In this sense, at least, the religious culture of India (viz. Vedism) that preceded Buddhism was certainly idolatrous.

[287] In his Introduction.

interpret it, and what they will disregard or reject. This too can be illustrated with reference to Tibet. Thus, Batchelor writes:

> *The Tibetans seem to have been entirely unaffected by the teachings of … the two great doctrinal traditions which flourished across the border in China. Neither were they aware of the commentarial tradition … prevalent in the Theravada schools of Sri Lanka and South-East Asia. Yet the most remarkable instance of the Tibetans' resistance to other forms of Buddhism is found in their reaction to the attempted introduction of the Ch'an (Zen) school from China during the eighth century.* (P. 64.)

The above criticism of Mahayana has perhaps an exception in the case of Ch'an (Zen) Buddhism. Although the modern Zen meditation centers I have seen all had statues of the Buddha on display, the philosophy of Zen is essentially non-devotional or even anti-devotional. This can be textually confirmed, for instance by the following extract from the *Bloodstream Sermon* traditionally attributed to Bodhidharma[288]:

> *But deluded people don't realize that their own mind is the buddha. They keep searching outside. They never stop invoking buddhas or worshipping buddhas… Don't indulge in such illusions… Even if a buddha or bodhisattva should suddenly appear before you, there's no need for reverence. This mind of ours is empty and contains no such form… Why worship illusions born of the mind? Those who worship don't know, and those who know don't worship.* (Pp. 25, 27.)

This passage clearly reasons that attachment to religious visions, and all the more therefore to representations, is antithetical to the core Buddhist belief. In the *Breakthrough Sermon*, replying to the question as to whether "casting statues" and other such external practices apparently taught in some sutras are of any use to achieving enlightenment, the Zen master answers that these are mere "metaphors"; he explains:

> *The Tathagata's sublime form can't be represented by metal. Those who seek enlightenment regard their bodies as the furnace, the Dharma as the fire, wisdom as the craftsmanship, and the three sets of precepts and six paramitas as the mold. They smelt and refine the true buddha-nature within themselves and pour it into the mold formed by the rules of discipline. Acting in perfect accordance with the Buddha's teaching, they naturally create a perfect likeness.* (Pp. 95-96.)

Note well the phrase "within themselves". Repeatedly, he insists on the redundancy and uselessness of any such external works and deeds; the essence of the Way is working on oneself, from the inside.

Even today, some Buddhists, at least some Zen teachers, seem to eschew idol worship. Note for instance Shunryu Suzuki's statement:

> *In our practice we have no… special object of worship. … Joshu, a great Chinese Zen master, said, "A clay Buddha cannot cross water; a bronze Buddha cannot get through a furnace; a wooden Buddha cannot get through fire."* (P. 75.)

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[288] The reputed Indian founder of specifically Ch'an Buddhism in China (*c*. 490-528 CE). Some modern scholars attribute this sermon to later monks, perhaps "of the Oxhead Zen School, which flourished in the seventh and eighths centuries", according to Red Pine, the translator, though he accepts the traditional attribution (see his Introduction).

14. Buddhist messianism

Mu Soeng also writes:

> *The notion of past Buddhas was most likely accepted even during the lifetime of Shakyamuni…. By first century C.E., …the notion of past and future Buddhas seems to have been well established. We can only speculate what influence the concept of world savior to come* (sayosant)*, from the Persian religion of Zoroastrianism, might have exercised on these developments.* (P. 55.)

With regard to the idea of a world savior, i.e. the messianic idea, I would not agree that it was probably imported. It is intrinsic to Buddhism, in the way of a prime given, that Buddha Shakyamuni[289], by finding his own way to Realization (assuming he did), and then preaching that way to others, broke the ground for all humanity and showed them a way to salvation. By definition, his achievement (if it indeed occurred) is extraordinary and of universal significance.

The story goes that he could have been satisfied with his own personal escape from samsara; but out of compassion (*karuna*) for other sentient beings, he chose to put off his final departure (*parinirvana*) so as to help them out first. We may therefore consider him as an unselfish person, one wishing to save others, and admit that Buddhism from its inception had ambitious soteriological motives.

This does not mean that Shakyamuni's breakthrough was necessarily unique. There is no logical reason to exclude that there may have been past Buddhas before this one or that there would be future ones after this one. On the contrary, granting that Shakyamuni's achievement was 'natural' (in a large sense, allowing for the transcending of immanent nature, i.e. of physical and mental identity), we would expect past and future Buddhas to be possible and likely.

Shakyamuni may have been the first, or there may have been others before him whose existence and whose possible teaching may not have left a historical trace. As for future Buddhas, the very fact that Shakyamuni taught implies that he considered that others could also attain buddhahood.

In this perspective, the Mahayana ideal of the bodhisattva appears like a perfectly natural development. By his own altruism, in delaying his *parinirvana* to teach, the Buddha gave the example of this practice. However, in time the bodhisattva ideal was perhaps taken to extremes. As Mu Soeng points out:

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289 This name simply means "the Sage from Shakya", referring to his place of origin.

> *The bodhisattva was thought to embody not only a spirit of compassion but also one of voluntary suffering. At times, the resolve of the bodhisattva was expressed in almost Christian terms. The idea of the suffering savior may have existed in some form in the Middle East before Christianity arose, but it did not appear in Buddhism until after the Christian era. The suffering bodhisattva so closely resembles the Christian conception of God in the form of Jesus who gave his life for others that we cannot dismiss the possibility that Buddhism borrowed this doctrine from Christianity, which was vigorous in Persia from the third century C.E. onward.* (P. 55.)[290]

There is (in my opinion) little in the original teaching of Buddhism to justify this particular development. Though Shakyamuni gave the example of altruism, he did not take it to the extreme of personal sacrifice, i.e. of suffering greatly for others. This notion could even be conceived as antithetical to original Buddhism, which after all is intended as a path for removing and avoiding suffering. Its teaching was positive, intended to make people healthy and happy, and not to cause them difficulties. The Buddha remained serene all his life, according to reports.

We should perhaps here distinguish two ways of suffering for others. A person wishing to help others may accept to suffer incidentally or accidentally in this pursuit. The suffering involved is not *per se* the means to the helpful goal, but only an unfortunate side effect. For example, a war hero goes first into battle, hoping to clear the way for his friends; he knows he may get killed or wounded, but that is not his intention; on the contrary, the more unscathed he gets through, the better (for he can then carry on fighting).

More prosaically, one may carry an old lady's shopping bag to stop her suffering muscular pains. The Christian ideal is not this – but rather one of "taking up the suffering of others". This means, not just relieving others' burdens (which cause them suffering), but experiencing their suffering in their stead. Jesus on the cross is depicted as suffering *in the place of* sinners, so they do not have to pay the price for their sins. This is a distinctive concept of altruism, which I doubt was originally intended in Buddhism.

I do not see how suffering as such can have any utility to anyone. To free someone else of suffering one must neutralize the causes of that suffering. Such intervention may occasionally cause oneself suffering – and it is easy to appreciate the virtue, value and beauty of such 'selfless' acts. If one realizes the relativity and impermanence of this world, one is not afraid of such personal sacrifice. But it is not one's suffering that relieves the person one helps, but one's effective action. The bodhisattva's role is not to suffer, but to be effective[291].

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[290] The Christian trinity is another doctrine which has a very close parallel in Buddhism, viz. the *trikaya* (three bodies of the Buddha). The resemblance between "father, holy ghost and son" (mentioned in Matthew 28:19, 2 Corinthians 13:14) and "*dharmakaya*, *samboghakaya* and *nirmanakaya*" (see Mu Soeng, pp. 89-90) is striking, although some differences can no doubt be pointed to. Here again, whether there has been an influence either way, or this is a similar response of the human intellect to the same problem of unification, is a moot issue. Judaism, for its part, has no recourse to a trinitarian concept of God.

[291] Suffering when helping others is not necessarily proof of unusual goodness; it is often just a sign of incompetence. Sometimes risks are taken and may result in personal pain, damage or destruction, but this is usually due to lack of skill. Tragedy is usually indicative of some weakness and failure.

15. Assimilating Buddhism

The migration of Buddhism to the West is bound to produce something new in many respects. Shunryu Suzuki[292] admitted as much when he said to his students: "Here in America we cannot define Zen Buddhists the same way we do in Japan…. You are on your way to discovering some appropriate way of life."

This would not be a phenomenon particular to Buddhism, but concerns any religion or cultural product. We can observe for example the movement of Christianity into Africa, South America and Asia. In each case, there are noticeable differences from the European original. And indeed, even among Europeans (and North Americans), Christianity has a variety of expressions. The same applies to Buddhism in Asia, and can be expected to apply to Buddhism in North America and Europe.

How did Buddhism migrate westward? First, Europeans came in contact with Buddhism (and other Oriental religions) in Asia. Some there showed their curiosity and willingness to learn, and eventually brought back some oral teachings, practices and texts to Europe. They gave lectures, and wrote articles and books, passing on Buddhist ideas. Documents were translated, as conscientiously as possible, both by Westerners and Orientals. Eventually, some Orientals came to Europe and North America to teach in person.

Translation is impossible without some interpretation. Every teacher carries a large part of tradition, but also a small part of personal interpretation. Necessarily, when any religion or cultural product arrives at a new region or country, it has to mix somewhat with the local culture, resulting in a new variation on the theme[293]. However purist the recipients try to be, their vision cannot help but be colored to some extent by their cultural antecedents. This is true of peoples – and it is true of individuals.

Some individuals pick and choose what pleases them in the import, while others try to go all the way and become orthodox. But whatever external appearances suggest, what goes on inside each individual is a commonplace process of assimilation of new ideas. Each individual has to digest the new outlook in accord with his or her personal psychological and intellectual parameters. In some cases, some rejection sooner or later occurs; in some cases, the individual finds his or her needs largely satisfied.

My own writing on Buddhism can accordingly be regarded as an account of my personal reactions, as a Western and Jewish philosopher, and especially as a logician, to this incoming

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292 P. 133.

293 An interesting example, because of its overt and extreme eclecticism, is the Cao Dai religion in Vietnam.

wave of ideas, at a particular place and time. I am not standing aloof on some pedestal. I make no claim to superiority or omniscience, but simply share my thoughts – frankly evaluating, criticizing, praising, rejecting, adapting, and conflating as seems appropriate. Not liking to be fooled or intimidated, I try not to take anything for granted; but I keep an open mind and a humble willingness to learn.

I have certainly over time learnt a lot, and often been pleasantly surprised and affected. I am always grateful for any knowledge, wisdom or virtue transmitted to me. Certainly, Buddhism – and the Orient in general – has a lot to teach us. I do not however believe it is omniscient and immune to feedback and correction. I do believe the philosophical and spiritual confluence of East and West can be of benefit to both sides; it is not a one-way street, either way. With maturity, we can jointly evolve some common understanding and direction.

16. Addenda (2009)

1. Since writing *More Meditations*, I have been mentally using the following **awareness checklist** in my meditations:

- BODY (verify/correct posture; and intensify body awareness, including physical sensations and emotional feelings).
- BREATH (in the nostrils and in the *hara*).
- THOUGHTS (all mental phenomena included, watch them but also try to dampen them and eventually stop them).
- SURROUNDS (the visual and auditory fields, touch sensations and smells).
- THE FACT OF CONSCIOUSNESS (wonder at it).
- THE ONE WHO IS CONSCIOUS (one's self – a non-phenomenal object of intuition).

I may go through this checklist rapidly at intervals, while using other techniques – or I may use it as my central meditation technique. This may be done by focusing on each item listed in turn – for the time of one breath, or three or ten breaths or more. At the end of the series, try to merge all the forms of awareness together, into one total awareness. Repeat the process a number of times, till its beneficial effect – viz. an increased degree of consciousness – is clearly felt.

These items correspond, of course, to the various aspects of the ordinary "mind" (or rather: "psyche"), including phenomenal experiences (physical or mental) and non-phenomenal (intuitive) ones, and conceptual derivatives of all these. It should be obvious that when I refer here to the "self", I mean the real self (which is entirely non-phenomenal, i.e. purely spiritual), not the illusory self or "ego" (which is largely phenomenal, though usually also involves some degree of consciousness of the underlying real self).

2. In meditation we want to focus on the here and now, remember. One valuable technique is to arouse **intense alertness**, like a hunter intent on spotting his prey or like a hunted animal. A useful way to motivate such alertness is to think of Zen stories where the meditator obtained sudden enlightenment (*satori*) when some unexpected event occurred, like some branch snapping. Thus, become watchful of all individual sights, sounds, or other sensations, with the thought that any one of them might bring you the hoped for flash of insight. In such case, no phenomenon is routine, but each deserves your full attention.

This consciousness involves both open-mindedness and concentration, i.e. both a wide field of attention and a pinpoint awareness of eventual events in it. An interesting aspect of it is that the watcher becomes 'transparent', in that he forgets himself and is essentially unaffected by what occurs around him (objectively or subjectively, i.e. in the physical or mental surrounds), having resolved not to interfere in the world process for a while. He is open to all occurrences – not as one asleep, but as one who is extremely awake (in a non-nervous, contemplative way). This self-forgetfulness is valuable in that it effaces the superficial false self, which is ordinarily so weighty a part of our experience. The underlying true self is of course still in fact present, but without overt self-consciousness.

Meditation is not something mechanical. There is no technique, no formula that can be applied unthinkingly, that will result in enlightenment. If there were, we would all be enlightened by now. The essence of meditation is – always remember – awareness, presence of mind (i.e. being oneself consciously present). Techniques can only help us get into a position facilitating such presence of mind, but sooner or later that living effort is essential. Once you know this, you go straight to it with greater ease. Awareness also means non-attachment – i.e. not getting carried away by thoughts or emotions that may arise. A light touch towards experience is necessary to remain free of its attractions, repulsions, compulsions and obstructions.

3. When focusing on phenomena, keep in mind that they are not the ultimate goal of meditation. Our field of ordinary experience is of necessity limited. We see and hear our immediate surrounds and thoughts, whereas the world out there and within is huge. Meditation aims at **the expansion of consciousness** – to infinity, if possible, i.e. beyond all limitations. We aim to look past the immediate experience – though not to its exclusion, i.e. while including it.

The realm of samsara is that of material and mental phenomena and the realm of nirvana is the transcendence of such phenomena. Thus, we need through meditation to realize that consciousness of the phenomenal is limiting – and learn to exist with a broader, hopefully boundless outlook. One can continue to walk through the phenomenal world and simultaneously be aware that this is only a small space within infinity. The value of this outlook is that one does not take the phenomenal world too seriously, not to get entangled in it – it then appears as an illusory narrowing of consciousness, beyond which one is able to look at all times.

4. We go through life with different and varying **degrees of consciousness**. Different people have different breadth and depth of consciousness – and each one of us at different times of one's life likewise has changing degrees of consciousness. When one is a baby, one's "world" may be limited to the taste of mother's milk, the feel of her kisses and caresses, and so on. As a child, we may be entirely focused on one's family, one's best friend, one's toys, one's school teacher, etc. Later on, as a teenager, one's attention may be centered on one's girlfriend, on one's studies, and so forth. After that, one's wife and kids, one's job, one's car and home, etc. In each phase of life, one's "world" is necessarily limited to a number of things. We may of course have more theoretical interests, like science or history or philosophy or religion, but most people have this in relatively limited quantities.

Our degree of consciousness usually increases with time, but sometimes it may decrease. If one takes up drugs or some other vice, one may actually become a less conscious person. So there are ups and downs, it is not all smooth sailing. There is no inevitability of development or evolution. Looking back on one's life, one can easily see this. If one learns from one's mistakes and proceeds in a purposeful manner, one can gradually direct one's life so that it is a spiritually upward mobile process. One can put one's life in *a broader context* that what is immediately perceived and desired by one's instincts or under the influence of various social forces. This is expansion of consciousness.

5. Basically, in meditation our goal is to become conscious of **the reality underlying** all phenomena – i.e. the "ground of being" or the "nature of mind" (in Buddhist parlance) or the "presence of God" (in a more Judaic perspective). Thus, when we focus on some physical and/or mental object(s), our interest in it/them is ultimately nil – we are in fact trying to get beyond these phenomenal fields, to look through them as it were. But to do so, we need to first focus on the here and now, and stop being distracted by passing thoughts and emotions.

Realization means getting in contact with reality. In principle, realization is possible at any moment – and indeed, some masters suggest that we are repeatedly throughout our meditations, our days, our life and even our death, at least momentarily getting such insight, but we are unable to notice it, or if we do notice it unable to stay with it[294]. It usually takes a lot of meditation practice to get to the stages where we are able to notice it and stay with it. However, knowing that realization is in fact so near can be very helpful – motivating us and increasing our degree of awareness.

The motive behind our meditation is, by the way, very important to its success. If we meditate out of unhappiness, i.e. because our fondest earthly desires are repeatedly frustrated, hoping that this activity will give us success in life, we cannot expect to get very high. We must rather realize that existence within the space of 'samsara' is inherently one of suffering, i.e. that the very fact of having a particular form and individual life is the source of suffering, and that only existence in 'nirvana' can liberate us from such constitutional suffering. These are two very different attitudes, note well. The one is still egoistically inclined; the other is indicative of a considerable spiritual elevation already. The one pursues happiness; the other is beyond such petty concerns: it is an expression of wisdom.

6. A very good formula for meditation, I have found, is to imagine oneself already enlightened/liberated. Start your meditation by saying: **the Buddha that I am within** is now going to sit down and do what Buddhas like to do, i.e. sit still and silent, fully aware, enjoying the here and now, devoid of reminiscences, anticipations, worries, plans, or any such mortal concerns. Amazingly, this approach very often works, i.e. it helps one transcend one's usual concerns and thoughts, and to concentrate on one's mediation object more easily and for a longer time.

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[294] See for instance: Sogyal Rinpoche, *The Tibetan Book of Living and Dying* (San Francisco: Harper Collins, 1994), chapter 21.

7. ***Prajna vs. Dhyana***. Rereading D. T. Suzuki's *Essays in Zen Buddhism*, I am struck at how different his conception of Zen Buddhism is. I must have noticed that during previous readings, but this time round it seems more personally significant. Due to a background in yoga meditation, I have personally inclined to Soto Zen, the more meditative branch of Zen, which teaches that if we sit in meditation, with the right posture and techniques, and with the right attitudes, we will naturally eventually break through to full enlightenment.

But D. T. Suzuki denies or doubts this result. He has more faith in Rinzai Zen, which uses *koans*. He considers the Soto way too passive, lacking in the necessary 'spirit of inquiry'. In his view, apparently, meditation (*dyana*) may bring about inner tranquility and even many deep insights, which are valuable preparations, but it cannot take us through the final gate to true enlightenment. For this decisive victory (*bodhi* or *satori*), a sharper sword is necessary, that of wisdom (*prajna*). The latter is made possible through full-time intense concentration on a koan under the guidance of an accredited master. This is the more active Rinzai way. (Strictly speaking, I would call this a meditation, albeit one of another sort than that of the Soto sect.)

Philip Kapleau's description of his difficult journey in *The Three Pillars of Zen (*1965) comes to mind here as a modern example. Personally, all my life I have considered having a guru as unnecessary, arguing that if the Buddha managed to find his way to enlightenment alone, without transmission from a teacher, then in principle other people could too. Now, rereading D. T. Suzuki, I'm wondering if such individualism has been wise. The trouble with relying on a teacher, especially nowadays, is how to know if he is genuine?

8. **Subject and Object**. Pursuing D. T. Suzuki's thought further, I re-read his *The Zen Doctrine of No-Mind*, and found it inspiring in the same direction. He often stresses here the non-separation of subject and object, as for instance on p. 133:

> *The state of no-mind-ness refers to the time prior to the separation of mind and world, when there is yet no mind standing against an external world and receiving its impressions through the various sense-channels. Not only a mind but a world has yet to come into existence.*

It occurred to me, reading that page, that this doctrine can be expressed in phenomenological terms. The phenomenological stance consists in just experiencing, i.e. in taking appearance as such, before any evaluations or theories concerning it are attempted – i.e. before it is classed as reality or illusion, matter or mind, or whatever. We could well say, as does Zen, that the subject-object dichotomy also occurs after this primary phenomenological experience – i.e. that it too is a rational rather than experiential belief.

Our ordinary response to experience (whether inner or outer seeming) is to immediately say "I am experiencing these appearances" – whence the Subject of experience seems to us inevitably implied by the very fact of appearance. Thus given a subject experiencing it, the content of experience becomes an Object. And since subject and object are distinct, a relation between them, which we call Consciousness, has to be assumed. Zen tells us that we can (and should) merely experience appearance as such, without bringing a self into the picture as the one experiencing.

Even if we must, to construct a coherent and credible epistemology, admit that we each routinely experience our self and its functions (cognition, volition and valuation) directly through intuition, we can still make this consistent with the said Zen insight by including all such intuitions of self, consciousness, will and value as elements *within* the field of appearance. They should not be regarded as standing outside the totality of experience looking in, but as parts of it. In that case, the interposition of a subject experiencing, the consequent objectification of the content of experience, and thirdly the assumption of an intermediary of consciousness to link these two together, can reasonably be avoided.

Thus, the phenomenological stance, properly understood, is not only prior to the reality-illusion distinction, or to the matter-mind distinction, but even to the subject-object distinction. The latter is rational construction, a hypothesis, a supposition of reason with a view to explain things, and not as we ordinarily think of it a primary experience, not a brute incontrovertible fact. To momentarily experience the field of appearance in such neutral fashion ordinarily requires an effort, but it is not too difficult. We stick to appearance as such (including any sense of self and consciousness we might have as part of it), and *abstain* from ratiocination as to whether someone is experiencing this appearance and through what medium that is made possible.

Of course, such momentary effort of purely phenomenological experience is very far from the Zen *satori*, which is supposed to be a permanent change in our way of being, experiencing and thinking. The latter cannot be obtained by a mere effort of will, but requires some sort of complex exercise, which is presumably what the koan meditation consists in. But we can still convincingly philosophically assimilate the Zen idea of non-separation between subject, consciousness and object, as here done.

Book 5. ZEN JUDAISM

Zen Judaism is a frank reflection on the tensions between reason and faith in today's context of knowledge, and on the need to inject Zen-like meditation into Judaism.

This work also treats some issues in ethics and theodicy.

Author's note

Wise men think out their thoughts; fools proclaim them. (H. Heine[295])

I have no desire or intent to weaken or destroy Judaism; if anything, quite the contrary, I wish to strengthen and save it. But I regard that objective facts and rigorous logic must imperatively be taken into consideration; they cannot just be ignored, as some try to do. Some retreat is often necessary; but retreat is not defeat. There is much to be gained by adopting a "Zen attitude" in the face of this necessary adaptation to reality. That is to say, by looking on unpleasant truths in the way a meditator looks upon change and disturbance. Unperturbed, cool, without resistance, with equanimity.

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[295] From *Gendanken und Einfalle* (quotation found in the Internet at Beliefnet.com). I insert this quotation in anticipation of criticism that may justly be leveled against me for writing this piece, which is a mixture of logic, science, Judaism and Buddhism. I should perhaps add these personal confessions: admit my lack of position of authority in some university, yeshiva or Zen monastery; my lack of broad fame and acceptance as an academic or writer; my lack of scholarship, Talmudic knowledge or meditative height. I am just a sincere seeker honestly sharing his thoughts.

1. God and Creation

The idea of God. The existence of God is suggested by the existence of the individual soul each of us intuits within his or her cognitions and volitions, as well as by various intellectual arguments[296]. The idea of God is philosophically reasonable, as *an extrapolation from and explanation of* the intuited fact of soul – for just as the scattered instances of mind and matter logically require some monistic unification, so do the scattered instances of soul; and indeed, these several unifications need in turn to eventually be unified together.

The important insight to have, here, is that the *personal* soul, with powers of consciousness, will and valuation, cannot be explained by reference to an *impersonal* spiritual Ground of Being, devoid of similar and greater powers of consciousness, will and valuation, which is the Buddhist atheistic thesis, and even less to an exclusively materialist postulate.

The idea of a living, personal God, with presumably extreme degrees of these same powers (i.e. omniscience, omnipotence and moral perfection), would seem a logical inference from our own finite existences. It is more than a mere extrapolation – it is an explanation, without which the introspectively evident fact of a personal soul remains surprising and unexplained.[297]

The idea of God seems perfectly reasonable and inevitable to whoever clearly reflects on the miracles of existence, of variety and change, of consciousness, and of causation and volition, in this world. Without such fascination, i.e. if one dimwittedly takes all that for granted and is not surprised by all of it, one is intellectually bound to some sort of atheism. Theism (i.e. monotheism, belief in God) is a product of metaphysical amazement.

If one asks enough questions and looks for credible answers, one is likely to believe in God. Disbelief depends on keeping one's mind somewhat closed to the issue, i.e. on a sort of enforced dumbness.

The idea of Creation. Justifying the idea of God does not by itself justify the idea of Creation as such, and much less a particular view (like that of Genesis) of the sequence of events involved in creation. Philosophically, Creation is a separate issue, requiring we advance additional evidence and arguments. In this context, we would first of all argue that, just as we

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296 Described and discussed in previous works of mine. See: *Judaic Logic*, chapter 14 and addenda 10 & 11. *Buddhist Illogic*, chapters 10 & 11. *Phenomenology*, chapter 9. *Volition and Allied Causal concepts*, chapters 2.4 & 15.2. *Meditations*, chapters 5, 6 & 8.

297 Note the similarity and difference between this argument for God, and the one Descartes proposed.

humans have cognitive and volitional power over matter, so by analogy or extrapolation does the presumed greater soul that is God have such powers and that to a much higher degree.

This is an argument in favor of the concept of Divine creation, i.e. of the conceivability of God having such power over matter. But it is not of course alone logically sufficient to establish the fact of Divine creation. On the other hand, the insufficiency of this argument to prove creation does not disprove it, either.

Moreover, the analogy is imperfect, because whereas we can only rearrange existing matter in various ways, we presume God to have created matter *ex nihilo* (or at least from non-matter). However, the said imperfection in analogy may be explained away by suggesting that individual souls are too small and weak to produce matter, though they are capable of mental creations (imagination), whereas the universal soul of God is grand and powerful enough to produce matter as well as mind. In causal logic terms: a complete cause may cause effects that a partial cause cannot.

We could also argue that in every little act of human (or animal) volition, some degree of creation is involved. That is, the act of willing may be conceived as the human spirit moving matter by injecting new energy into it. Such energy input may be regarded as equivalent to creation, since ultimately energy and matter are one. In this perspective, the great creation of the material world by God may be conceived by analogy from the little creative acts involved in our everyday will.[298]

A further argument we might propose to buttress the idea of creation would be Monism. This philosophy is based on the logical need for an ultimate unity between the substances or domains constituting the world of our experience, namely matter, mind and soul. Granting such basic unity, the ontological distance between God (as the common ground of all souls) and perceived matter and mind is considerably reduced, making creation more acceptable to reason.

We can furthermore adduce the observed fact of impermanence of material and mental phenomena in support of the hypothesis of creation. How so? Impermanence does not of course logically imply creation, but it suggests it somewhat if we admit that underlying phenomenal impermanence is the permanence of the spiritual realm. This refers to the permanence of the spiritual substance our individual souls are made of, i.e. it refers to God, the great root Soul, rather than to us humans as individuated spirits.

If impermanent things emerge from the Permanent, the latter might be said to be the ground or cause of the former. This causal relation may be postulated as one of creation, if we consider that the eternal universal Soul has (like us and more so) *a personality*, with powers of cognition, volition and valuation, as earlier argued.

Two acts of faith. Howbeit, both the successive ideas of God and Creation still depend on faith. The preceding arguments in their favor, and any other similar reasons we might propose, only constitute inductive building blocks; they are not enough to be declared incontrovertible proof. Such absolute proof seems inconceivable for limited intellects like ours – only God could conceivably know for sure that He exists and He created the rest of the world.

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[298] For a detailed analysis of the nature and mechanics of will, see my work *Volition and Allied Causal Concepts*.

This can and should be freely admitted by all advocates of these monotheistic ideas, to preempt any impression their opponents might give that lack of full proof is disproof. For advocates of atheism often use this fallacy to trick the gullible, suggesting that since monotheism cannot be definitively proved, the opposite thesis must be true. Such argument ignores or discards the fact that atheism is equally impossible to definitively prove!

As for the in-between posture of agnosticism, it is not unrespectable, since both monotheism and atheism are based on some measure of faith. But suspension of judgment is not the only posture reason can recommend, for then almost everything we claim as knowledge would be relegated to a similar intellectual limbo. Human beings are required by their natural condition to make choices and take action; if they truly avoided doing so, they would simply die out. Thus, agnosticism does not actually occur in practice – people who theoretically go for it must still daily go one way or the other (in the way of believers or that of atheists), whether they admit they do or not.

2. Torah and faith

The Torah account. The accounts of God and Creation given in the Torah (Jewish Bible), or other religious documents, are not guaranteed by the previously indicated philosophical arguments and acts of faith. Belief in these religious accounts requires *additional acts of faith*, because they involve additional descriptive details not included in the barebones account proposed by mere theology.

Thus, it is rationally quite possible to believe in God and Creation, without necessarily disbelieving in the Big Bang time line, or in Evolution of Species, and other such more modern scientific theories that go against the literal interpretation of the Biblical story of the world and humanity. Similarly, there is bound to be some divergence between the moral, social and spiritual laws promulgated in holy books, and those that reason might find convincing.

Everything must be considered on a case-by-case basis, without prejudice and with an open mind. This does not mean that reason will invariably disagree with faith. Our holy books, transmitted to us by our forefathers, are full of wisdom and good, and have it in them to continue to inspire us for all generations. The spiritual poverty of the secular, their profound materialism and the hopeless narrowness of their life perspectives, is evident. But reason must still be allowed to assess the situation and have its say, and even on occasion disagree. It is then up to individual to make his or her choices and take the implied risks, one way or the other.

The traditional argument that Divine revelation is guaranteed by the fact that it was witnessed by Moses and prophets, or by the people of Israel assembled at the foot of Sinai and in other times and locations, or by later Sages – this is of course *a circular argument*. We (common folk today) are still required to take on faith something someone else claims (or is claimed) to have experienced; this is second-hand evidence, not first-hand for each one of us. Of course, too, it remains possible that if we do not believe (on faith), we will be made to pay the dire consequences (either during this life or in the thereafter); hence, each person has to decide what to believe.

Torah is of course in its entirety essential to Judaism. To put the Torah even partially in doubt as here done is understandably regarded by many as heresy. No one likes to be branded a heretic, but to ignore (disregard, discard) evident facts and logical arguments is not an acceptable posture. It is acceptable to have faith in something unproven (i.e. not proven to be), but faith in things disproven (i.e. proven not to be) by experience and/or reason is difficult to justify. One has to retain objectivity and good judgment at all times; that is our dignity and

honor as human beings. God surely respects and does not resent love of truth and intellectual integrity.

Perhaps the solution to the modern problem of a widening gap between the Torah account of nature and that of secular science is to adopt a Platonic Idealist posture, and say that the concrete earthly Torah is an imperfect but still valuable reflection of an ideal "heavenly Torah". This would imply that the prophets, and particularly Moses, perceived the heavenly Torah all right, but when they tried to put it in writing here below, they tended to mix in some of the cultural beliefs of their time and place. No conscious attempt to add to the Torah was involved, but simply a natural disposition of all human beings to discourse in terms of the sensibilities and categories of their milieu and historical period.

This perspective already exists to some extent in Judaism, but it may need to be taken more radically if we are to both frankly and gracefully acknowledge scientific discoveries and advances, and yet retain the moral and spiritual – and even ritual – essentials of Judaism. The same approach can be used to explain and transcend Talmudic errors of fact. Other religions can similarly argue, and likewise adapt to humanity's changing knowledge context.

It is not enough to say, as some do[299], that religion and science are two separate domains, one dealing with moral and spiritual issues and the other with experienced events and natural laws, for this approach does not sufficiently focus on the psychological difficulties involved. A believer in the literal Torah has a hard time separating the claims regarding nature and history in it from its moral and spiritual message. A deeper rationale is required to permit *critical thought with a good conscience*.

Moreover, I very much doubt that we can consistently keep the realms of 'is' and 'ought' so far apart, or that it is wise to try to. The fact of the matter is that our ethical beliefs are strongly dependent on our alethic beliefs. What we think we ought to do depends considerably on how we perceive and conceive ourselves and the world around us. These two domains of human interest are related and the study of their precise relationships exists and is called deontic logic or deontology.

For this reason, seemingly purely moral, spiritual or ritual matters may to a more modern mind seem unconvincing. The practice of animal sacrifices is a case in point. Maimonides rightly expressed doubt as to the value of their resumption in the future. If we examine the history of religions, we find such practices to be commonplace in many different cultures, such as India or South America. This sort of individual or collective worship using animals was probably inherited from our common prehistoric ancestors. Various superstitious beliefs are no doubt at least subconsciously involved in it.

Another practice within Biblical Judaism that seems to have shamanistic roots deep down in history is the set of rites (described in Leviticus, *tazria-metsora*) used to clear the "plague of leprosy" in people or in clothes and homes. Such ancient and obviously outdated practices can surely be questioned in a scientific perspective, even if they are religious in content rather than naturalistic. Were we to encounter such an affliction, we would simply identify it as a fungus (or whatever), and find a material antidote for it. Thus, it is not accurate to depict the problem as a simple is-ought dichotomy.

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299 For instance, Gould in *Rocks of Ages*.

Poetic transmissions of wisdom. Some parts of the Torah can seemingly be read literally, but not all. In view of the serious discrepancies between stories like those of Creation and of the Flood and corresponding scientific and historic accounts, we must learn 77not to read such passages of the Torah literally. The Rabbis insist on such literal interpretation, and build their whole system of conception of the world on this assumption. But we are logically forced to view them henceforth as *poetic inventions*. They were freely composed, at some time(s), by some human being(s), with the intent to give concrete form to some abstract belief and to teach some lesson.

The poets concerned expressed what, to their minds, at the time when they told or wrote down the stories, seemed like a likely scenario, or at least one that (though perhaps partly fictional) served to illustrate the teachings they wished to transmit. There was no doubt an accumulation of beliefs over time, i.e. a handing down from generation to generation of parts of the story, which were then echoed and fleshed out, until the story acquired the shape we know. In fact, the process of elaboration did not end with the writing down of the Torah (whenever that happened) but continued with more developments and embellishments in the Midrash, in the Zohar, and so forth.

This is mythical discourse, found in every culture. It does not have to be taken as literally true, but as indicative of some more abstract truths. Thus, the important point in the story of the Creation is not the precise narrative given in the text, but the claim that God created the universe as a whole and mankind in particular. The scientific discoveries of the Big Bang, of the 13.7 billion years' existence and evolution of the world since then, of the 4.5 billion years age of the Earth, of all the species of life that have arisen on it in the last 4 billion years, of the very recent evolution of man-like species, perhaps some 2 million years ago – none of these scientific discoveries and theories logically displaces the claim to God and Creation.

Similarly, the stories of Adam and Eve, Cain and Abel, the Flood, and many more – all contain *timeless and universal moral lessons*, about humility (not to eat the fruit of the Tree of Knowledge), about murder ('am I my Brother's keeper?'), about sin and its punishment (the generation of the Flood), and so forth. They remain *essentially* true, even if not *literally* true. Compare for instance the Biblical idea of the primordial taboo Tree of Knowledge to the Buddhist doctrine that at the root of Man's plight is a delusional grabbing at a superficial sort of knowledge that is in fact the essence of ignorance.

Concrete narratives are usually more emotionally touching and inspiring than dry abstract exposés. Even after years of reading and rereading some of the stories in the Torah and the Nakh, I still find myself often deeply touched and moved. Tears of sadness and joy come to my eyes as the Shunammite lady who has just lost her young son comes to the prophet Elisha for help (2 Kings 4:8-37). Again and again, every Purim, the story of Esther fires the full range of my emotions. Such stories depict for us what beautiful human beings are and how they behave. How would we know the spiritual possibilities open to us, otherwise? We rarely if ever meet such inspiring people in real life.

So long as we fear to abandon literal readings of the Torah (or Christian Bible, or Koran, etc.) when science makes it logically necessary, we are stuck in a 'fundamentalist' universe that is bound to cause conflict and pain. With a more open mind, we can read our holy book as poetry and learn from it the wisdom it is really meant to transmit.

The practice of faith. The term 'faith' is understood as referring primarily to belief – generally, to a belief that goes *beyond* the recommendations of reason, and in some cases *against* those recommendations.

Faith that merely goes over and above reason, or dares to fill gaps in knowledge that reason leaves behind, is reasonable – i.e. still within the bounds of rationality in a larger sense. For example, to have faith in God and Creation is not antithetical to reason; for though reason does not prove these beliefs, it does not disprove them either.

But faith contrary to reason is in a more feeble epistemological position. Of course, reason can err, and so it is not entirely unthinkable to adopt anti-rational postures. But, though it is empirically true that reason does occasionally err, it does not follow that reason is very likely to be erring in the particular case at hand. For example, disbelieving that our planet has a history of some 4.5 billion year, and that animal species have evolved during that time, is stretching faith a bit too far.

Faith is generally considered a virtue, in religion; it earns one spiritual credit. That is because, like any virtue, like any source of spiritual gain or advance, it draws one (or is believed to draw one) *closer to God* (however conceived by that faith). To have faith is comparable to sacrifice – it is sacrificing one's intellectual carefulness or incredulity to some extent. It is also an act of humility and modesty.

Religious faith signifies a set or system of *beliefs*, i.e. a voluntary posture of the cognitive faculty in various regards. But it implies more than that. It also implies a set of *attitudes and intentions*, i.e. a positioning and orientation of the faculty of volition; and moreover, it implies a complex of *emotional ties*. And of course, *specific thoughts and actions* emerge from these preconditions.

That is to say, to have faith (e.g. in God[300]) is not merely to engage one's cognitive faculty in a certain direction, but also more broadly involves one's volitional and emotional faculties. All three aspects of the human psyche are enlisted – cognition, will and valuation. To take on a faith is to subject oneself to practical demands on all these fronts.

Within Judaism, for instance, this is perhaps implicit in the statement[301]: "And you shall love the Lord your God with all your heart, and with all your soul, and with all your might" (Deut. 6:5) – if we interpret "your heart" (Heb. *levavcha*) as referring to valuations, "your soul" (Heb. *nafshecha*) as referring to cognitions, and "your might" (Heb. *meodecha*) as referring to volitions. "All" (of your heart, soul and might) is meant to stress the need for consistency in all one's pursuits.

Taking this declaration of faith upon himself, the Jew (and similarly for the Jewess, of course) resolves that his heart will throb with Jewish values and concerns; that his soul's attention will turn towards observations and intellectual studies compatible with and relevant to love of God; and that he will use his physical, mental, and spiritual powers in efforts appropriate to those ends.

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300 To give another example: for Buddhists, the basic act of faith would relate to the possibility of liberation from the wheel of karma.

301 Which is, of course, part of the crucial *Shema Israel* prayer. Other interpretations than those proposed here are also found in the tradition.

But this should not be viewed as a call to lie to oneself or to others – or to God. Or to twist the truth, or ignore facts and arguments that are obviously (or just apparently, even) relevant and credible. Honesty surely remains a must. Faith is comparable to a leap into empty space – such a leap can be courageous, but it can also be foolish. One should find the golden mean, in this as in all other things.

Note in any case that it is possible to doggedly practice *mitzvot* (religious prescriptions) even while not really believing in their Divine source. It is not my purpose here to turn Jews away from practice of any of the mitzvot. Every man or woman is responsible for his or her own choices. Don't blame your choices on me.

3. Biblical text and commentary

On Biblical commentaries. Looking at the commentaries of the *Midrash* or of different rabbinical personalities (Talmudic or later) relative to each passage of the Torah (or *Chumash*, i.e. the Five Books of Moses) or other parts of the *Tanakh* (Jewish Bible as a whole), it seems evident that each of them is *imaginatively filling narrative gaps or proposing resolutions of apparent contradictions in the text*.

Often, the language used in the Biblical text is sufficiently ambiguous that many interpretations are possible even of the primary story line, even before any fleshing out with additional details is attempted. This is called *Haggadah*, story-telling.

The different linguistic interpretations, story embellishments or explanations of inconsistencies or difficulties are not necessarily harmonious with each other, although each rabbi tries to form an internally consistent line of reasoning (called a *shitah*). Yet all are equally respected and included as true in the tradition; this mental gymnastic being justified by saying that "the Torah has seventy facets" (without considering the epistemological and ontological implications of such a proposition).

So long as they seem credible[302] in various ways (e.g. homiletically inspiring or psychologically revealing), they are traditionally accepted as possible truths, and thence as true in some way, i.e. as some facet of the whole truth. They must of course also be compatible with Jewish doctrine and values. Thus, for instance, the heroes must be depicted in a good light; even if they are shown as momentarily failing, there must be a moral to that failing.

However, from a neutral epistemological point of view, all such commentaries are simply *speculations formed around a limited and static database*, viz. the given written text. According to inductive logic, these commentaries, being all reasonably consistent with that given data and internally consistent, are all indeed *equally conceivable hypotheses*. But that does *not* make them necessarily true, however conceivable they seem. And it does *not* imply them to be necessarily mutually compatible.

If we limit our judgment to the written text, and suppose that the different speculations (or conjectures) were well formulated, there is no way for us to choose between them or validate or invalidate any of them. However, if we refer to logic, historical evidence, scientific developments and philosophical considerations, we may be able to challenge or eliminate

[302] Credibility is of course very relative to one's context of knowledge and understanding. There are Midrashic commentaries that I find hilariously fanciful, though I well imagine that to some people they seem or have seemed (especially in earlier times) quite credible.

some or all of them, and even indeed in some cases put in doubt or reject the database itself (i.e. the core claims in the written text).

Logic does not admit of relativity as a realistic principle. If the explanatory formulas proposed by different rabbis are in conflict, they may not be considered all strictly speaking true side by side. They may be considered equally or variously *uncertain*, but not equally *true*. Contradiction (if, of course, contradiction is indeed present in a given case) is logically unacceptable. This principle of the absoluteness of eventual truth is unfortunately not always clearly admitted in rabbinical epistemology.

Moreover, epistemology must ask the rabbis who or where they got their information *from*. Sometimes, the historical sources are evident and known. But in most cases, previously unknown information has suddenly appeared! If this information was never mentioned in writing by previous commentators for hundreds or even thousands of years, how did the later commentators get it? It is hinted that an oral transmission has preserved the information since Sinai. But there is no proof of such claims; they are therefore arbitrary assertions, just say-so. *An unproven principle cannot be used as an incontrovertible proof of other unproven propositions*.

Additionally, when a commentator interprets a Torah passage, his comments sometimes have little to do with the text itself. The text is in such cases (i.e. often, but not always) used more as a pretext or springboard for a digression. The connection between the text and the commentary is more one of association of ideas than one of causality. Yet, once made – even if this comment is not directly relevant or logically appropriate to the text, even if it is incoherent nonsense – the comment is dogmatically assumed to be essential and irrefutable. In this way, the text loses its original simplicity and clarity and becomes surrounded by an immovable crust of commentary.

Moreover, individual commentators bring their personal mind-set to their interpretations. They all of course have in common: love of God, the Torah, the Jews and Eretz Israel, and contempt for the enemies of these values. But, for instance, whereas Rashi tends to appeal to miracles more often than logically necessary, the Ramban (who admittedly wrote more than a century and a half later) is comparatively far more analytic and rationalistic in his explications of events.

For example, Rashi. Without doubt, the most prolific, influential and loved commentator of the Bible (and the Talmud) has been R. Shlomo Yitzhaki, known as Rashi (France, 1040-1105). Most of his commentaries are indeed illuminating, but many (if taken literally) must be regarded as fantastical and antiquated. Consider, for instances, some of his assertions in relation to the first chapter of Genesis.

Commenting on the exclusive use of the Divine name ‘Elokim’ in this chapter (which name is traditionally associated with Justice – in contrast to the four-letter ineffable name ‘YKVK’, which is considered as standing for the attribute of Mercy, and which only appears as of the second chapter), Rashi says that God first created the world on the basis of strict justice, and then decided it could not endure on that basis alone, and so introduced mercy. This sounds like a neat explanation, until one asks the question: is it conceivable that an omniscient Creator

would engage in trial and error? Surely, He would know in advance what was going to work and what wouldn't! So such an explanation is logically untenable[303].

Further on, Rashi claims that the sun and moon were originally created of equal size, but then the moon complained that it was not bigger than the sun, so it was instead made smaller. This could be taken as an object lesson, to teach us humility. But as regards the actual history of these astronomical objects, while it might have been conjectured like that in Rashi's day, it is known for sure to be false today. The moon was from its formation a very much smaller entity that the sun. But furthermore, are we to believe that the moon had a preference and a way to express it? Was the moon endowed with consciousness, choice and speech? In antiquity, people believed this and assigned godly status to the orbs; but if Rashi had been omniscient (as some effectively believe) he should have known better.

Next, Rashi claims that the stars were created as satellites to the moon, to console it for its loss of status due to its shrinking. Leaving aside the ascription, here again, of human emotions to inanimate matter – we must point out that the stars are today known to be enormously bigger (and much older) than the moon. Some stars are so enormous that our sun (a star itself) is a mere speck of dust in comparison; all the more so, the moon (which is itself a speck of dust compared to the sun). The reason the stars appear smaller is simply that they are much further away. Rashi evidently based his beliefs on mere naked eye observation of the sky; he had no special knowledge.

And so forth – we could go on and on, showing up the inaccuracies and absurdities in many of Rashi's, and indeed other commentators', comments on this passage of the Bible, and many others. A whole book of comments could be written on this; but I will not here pursue the matter, considering that every educated and honest reader is quite capable of doing the job without my help.

> Note however that, although Judaism teaches us to ask questions, it does not appreciate overly insistent questioning. We may dig, but not too deeply. Faith and simplicity of spirit are recommended – that is, naivety is enjoined, so as to avoid embarrassing challenges or criticisms. If one does insist on credible answers, one is effectively suspected of moral failings. This is an *argumentum ad hominem***.** A threat of Divine retribution hangs in the air, frightening the recalcitrant into submission. This is an *argumentum ad baculum* or *ad metum***.**

On the Biblical text. Of course, one can go deeper than that in challenging Biblical narrative, and many dare to do so nowadays. Indeed, so much doubt concerning this document has been sown in the last couple of centuries that it would be dishonest not to examine the issue at all. Some of this doubt has ulterior motives and is clearly open to debate; but some of it seems hard to beat.

Looking at the work of commentators, one can view them as effective novelists, who enrich accepted facts with elaborate fictions. Just as today, writers of historical novels (or even academic historians, to some extent) use their imagination to concretize in narrative form their theories regarding historically more or less certain events, so with Bible commentators.

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[303] An alternative explanation is offered by Sforno (Italy, c. 1475 – 1550), who associates the Tetragrammaton with eternity.

But moreover, the Bible *itself* may be a novel, a grand saga-type novel. Or perhaps rather, as many contend, a collection of novels, some of which have been merged together to make them seem more like one. This grand novel includes the story of a certain family (the family of the Patriarchs) and a certain nation (the Children of Israel, the Jews), as well as a collection of their beliefs (including, for instance, Monotheism and Creationism), practices (e.g. the Judaic legal system and sacrificial rites) and values (e.g. worship of God and love of *tzeddaka*).

Some of the stories and claims in this book are no doubt or very likely factual, but some are no doubt or very likely fictional. Some have been partly or fully confirmed by scientific, historical, archeological and other research; but some have been greatly put in doubt if not thoroughly debunked. Many, of course, are uncertain either way.

Of course, not all modern historians and critics are objective; some are motivated by an anti-religious agenda and cannot be considered authoritative. But on the whole, the trend is clear: there are serious experiential and rational grounds for doubt of the religious scenarios. Those who choose to ignore these grounds are not being objective or honest.

A possible scenario for the Torah's production is that there were some core oral traditions in circulation, such as the ancestral origin of the Jewish people or the story of their time of slavery in Egypt. Some of those stories may have been mythical in whole or in part, but some were no doubt factual. Fiction is always based on some fact.

These stories were eventually written down by one or more religious or historical novelists, no doubt well-meaning people who sought to solidify collective memory. These novelists may have put down in writing the oral traditions verbatim, or from the start fleshed them out somewhat.

Later, the earliest commentators may have integrated their further embellishments directly into the text, expanding it to some extent. However, at some stage such modifications of the core text became unacceptable, because by then the text was already sufficiently widely known that changes would lack credibility.

Commentary thus passed over to another field of tradition – first, orally again, then again in writing (as the Talmud, etc.). This was eventually claimed as authoritative as the original text. A good and quite late example of this stage is the *Zohar*. In this context, the argument of hidden transmission is often typically invoked.

Throughout this process of growing and therefore changing tradition, *the passage of time* plays a leading role. The further back in time events are, the more credible they seem, because the more difficult it becomes to question them. They cannot readily be proved, but they cannot readily be disproved either. Or so it seems, although in some cases ancient beliefs have indeed been convincingly refuted in modern times (e.g. the belief in a less than 6,000 year old world). Just as ageing wine becomes tastier, so religious documents become more firmly rooted and kosher as time passes.

But even a quite new doctrine or document can suddenly appear in history, and be considered binding, provided it is claimed to be old. In 2 Kings 22:8-13 (and in 2 Chronicles 34:14-21), we are told that during king Josiah's reign the High Priest Hilkiah "found the book of Torah (*sefer haTorah*)" in the Temple. This is traditionally identified as the book of Deuteronomy (*Devarim*).

An obvious question arises, if this story is true: was that the rediscovery of a preexisting but temporarily lost document, or was it the introduction of a newly written document under the guise of rediscovery? For how is it conceivable that such a crucial scroll of Torah would have been destroyed everywhere, and even forgotten by most people, save one copy that Hilkiah had hidden for a while or simply found by chance?

That the scenario was accepted at the time does not prove it. The people concerned might have been sufficiently credulous to believe whatever they were told. They had just gone through difficult times, remember. Many were perhaps ignorant, and could not have thought about such issues. Some, perhaps Josiah among them, knew the truth, but found it politically or otherwise convenient to let the sleight-of-hand pass without objecting.

So, in this story from Judaism's own history books, we may have an example of how new primary material *might* have been be injected into the stream of tradition. (For all that, I respect the fifth book of the Torah as a genuine continuation of the first four, which do not as clearly end the narrative as it does. My intent here is only to illustrate a process, not make any specific claims.)

This whole process of evolving tradition applies equally well, and in many respects more obviously, to the later offshoots of Judaism, notably the Christian Bible and the Moslem Koran[304]. The same turn of events is found in other religions too, like the Hindu and Buddhist. It is the way religious documents and traditions naturally develop in human history.

Apologetics. It is important for those who wish to defend religion not to get involved in foolish apologetics. This term refers to a last ditch stand to save past literal interpretations of some part of the text from the doubt produced by recent scientific discoveries or arguments. A commonly given example is the insistence on literally six days of Creation some 6,000 years ago, and the order of Creation given in Genesis, contrary to now well-established scientific belief in an at least 13.7 billion year-old material universe with a very different proposed ordering of subsequent events.

The apologetic commentator resists change by projecting scenarios that are only superficially credible. If we look at them a bit more deeply, we can easily spot the interpretative error(s) involved. For example: given the empirical confirmations of the theory of evolution (which do not perhaps definitely prove the theory, but which certainly make it *inductively superior to any other hypothesis* advanced so far), it is difficult to see how the Adam and Eve story can be taken at face value.

The apologist might now concede prehistory and admit that there were other human-like beings on Earth before Adam and Eve, and this for tens or hundreds of thousands of years, but he suggests that one family of such humans was Divinely selected some 6'000 years ago and

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[304] As regards the Koran, it was allegedly compiled from notes left behind by the "prophet" Mohammed, in the twenty or so years after his death. But the editing, by scribes under the direction of the Calif Uthman (Mohammed's son-in-law), was selective. Many notes were reportedly deliberately excluded from the compilation, and erased, burnt or hidden away. Some people, it is said, were repressed for objecting to such slanted editing. (See Bar-Zeev, pp. 24-26.) We see in this example how a document may be shaped by the deliberate intentions (spiritual, political or personal) of one or more individuals.

received a special soul which henceforth distinguished it. This may seem at first sight like a harmless and conceivable reconciliation, but upon reflection it cannot be reasonably upheld.

For the empirical truth of the matter is that genetic studies have clearly shown that currently existing humans do *not* all descend from a single couple (viz. Adam and Eve, or whoever) some 6,000 years ago. Their genetic forebears, though evidently genetically related, are far more geographically scattered and variously ancient. It follows that the proposed scenario to 'save' the literal Genesis story is not successful in fact.

A particular type of apologetics consists in anachronistically claiming that the writer(s) and past commentators of the Torah *knew all along* that this or that historical or scientific claim was only intended metaphorically, allegorically, or mystically, and not literally. This is a convenient *ex post facto* argument used by later rabbis when all other apologetics fail, in order to maintain the credibility of the written and oral Torah.

But it is evident from any honest scrutiny of past rabbinical pronouncements that the earlier authorities, under no external pressure to recant, certainly considered all claims made as literally true. And indeed, many still do today. And indeed, most authorities would if pushed to the wall agree with the principle that the *pshat* (or simple, literal) reading is always true, even if additional figurative or esoteric meanings are proposed.

This insight is important, because if we follow its logic we must admit that if many past authorities were in error with regard to many historical and scientific claims, then their more religious, legal and ritual claims are *also* to some extent open to doubt. The fact that a *more recent* authority has admitted a claim not to be literally true does not change the fact that *the past* authorities believed it literally. The psycho-epistemology of the earlier proponents remains doubtful, *even if* later ones apologetically qualify their statements.

Considering, for instance, that many of the writers of fanciful *midrashim* (stories written in Talmudic times) were at the same time *halakhic* authorities (Jewish law makers), we may well wonder whether such people (who evidently could not clearly distinguish between their imagination and reality) can be trusted to run our lives (by claiming all their rulings to be of ultimately Divine origin).

Had they said explicitly: "this is of course a metaphor, don't take what I say literally", their credibility would have been intact; but they usually made no such disclaimer. And indeed, most if not all people took their sayings literally for centuries thereafter, and many still do.

Moreover, the later disclaimers are formulated in such a way that the religious consequences are made to seem localized and insignificant. The modern rabbis who admit past factual errors by authorities do not draw any systematic and radical conclusions from their admissions. Seeing the epistemological limitations of their predecessors, they do not reassess the whole range of doctrines and beliefs received from them.

One notable artifice used by the rabbinical commentators in such contexts is the "Nature has changed" (*nishtaneh hateva*) argument. Faced with a serious disagreement between some Torah statement or the assumptions of past deciders of the law concerning some aspect of nature, and present scientific knowledge about it, later deciders occasionally reinterpret the Torah statement or revise the law, claiming it is no longer applicable because "Nature has changed" – i.e. the facts or laws of nature involved have literally become different.

They do not provide some proof that Nature has changed – but to them it seems obvious that "it must have", because in their minds the Torah or past deciders could not have made a mistake. This posture, that Nature is more subject to change than the *halakhah*, is pretty much inevitable if we start with the assumption that once the law has been decided it is settled once and for all. The deciders are then effectively regarded as infallible and their decisions as irreversible. The only way then to get round them is to regard the terms involved as different or the conditions as changed somehow.

Rabbinical commentators are masters in the art of weaving tortuous arguments that give the impression that all apparent difficulties of this sort are satisfactorily resolved and dealt with. But if we look more closely, and with a wider context in mind, we may at times find their reasoning disappointingly shallow if not dishonest. Religion is, due to its inherent rigidity, unfortunately often based on manipulation of opinion.

In conclusion, one should not base one's faith in God, Creation and Torah values on too literal an interpretation of the Torah text and its subsequent commentaries. One should remain open-minded and flexible; open to reason and experience, and willing to adapt one's belief accordingly. Stick to essentials and act in a mature manner.

We should, in other words, *enlarge* our faith, and make it less rigidly attached to some particular scenario. We may, and I daresay should, remain inspired and guided by the Torah, by all means; but we can no longer credibly insist on literal truth everywhere in it. Similarly, we may remain grateful to the enlightenment of the text that commentators have brought us, but must at the same time remain critical at some level and be prepared to exercise independent judgment.

The same attitude applies to the Christian Bible, the Moslem Koran and other religious texts and commentaries thereto. Fundamentalists, who refuse to adapt to changing knowledge context, do religion a disservice, making it seem wholly instead of only partly implausible.

4. Tradition vs. innovation

I am not here engaged in the fashionable sport of bashing religions, but merely stating what seems evident, *in view of the many glaring errors of fact and logic* in all such documents and traditions, and in view of surrounding historical considerations. But such insights should not make us abandon our religious traditions altogether. I would opt for a median position, neither fanatically religious nor aggressively secularist.

My attitude to religion, note well, is not that of an opponent out to discredit it and humiliate its proponents. I favor a "Zen attitude" – the outlook of a meditator patiently and confidently watching thoughts flow by. I do not expect immediate and definite answers to all questions. I am not attached to results, pro or con. Rather, I meditate on, and I am duly grateful when new insights happen to come. In this way, my impartiality, objectivity and credibility are always maintained.

None of the criticisms of religion need be taken as excluding the possibility of God from human knowledge. The many imperfections in religion do not even exclude the possibility of (individual or collective) human encounters with God, like those believed to have taken place at Sinai about 3,300 years ago. We can keep an open mind either way. There is no logical justification in refusing all "metaphysical speculation" offhand and forever[305]. Speculation is one of the wondrous powers of the human mind – it is silly to dogmatically block it off. Such a policy can only impoverish human thought and being.

The process of religious development above described must be understood in its essence, as one of *transmission of various crucial values*. We should not throw out the baby with the bath water, and reject the tradition wholesale because of its scientific, historical and other flaws. Such indiscriminate rejection can only result in a moral and spiritual impasse such as we see around us today. Nothing is to be gained but the bankruptcy of human values, if past wisdom is totally abandoned.

> A comment regarding anti-Semitism is worth making in this context. A major reason why Jews are often hated by non-Jews (especially Christian and Moslem, but the disease seems to be spreading further nowadays), and indeed why religious Jews are often hated by non-religious ones (the so-called self-hating Jews) is that Judaism has brought the burden of God awareness into the world – the "yoke of the kingdom of heaven".
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> This is perceived by many as an artificial imposition of undesirable duties and inhibitions, and the people who made this annoyance happen (the Jews) are deeply

[305] Contrary to what Bertrand Russell and others have insisted.

resented for it. Of course, not everyone has such negative reaction, but some people unfortunately do. In any case, we should keep in mind that many of the criticisms of religion are simply resistance to its ethical impositions. The critic is looking for ways to shake off the burden.

Worse still, those who radically oppose all religion end up *perversely* advocating the very opposite of religious virtues and values. What was virtuous and good becomes vicious and bad, and conversely. This is the spirit of our times, our *Zeitgeis*. For example, nowadays, Israel is projected by many leftist groups and media (some of which involve Jews) as the aggressor towards the Arabs rather than as their victim. Again, homosexuality has become a fashion instead of being viewed as one of the most abominable practices possible to men and women.

We should rather learn to identify the heart of the matter in each area of concern to the religious tradition, its spiritual source. We should find the precious teaching of wisdom in it, and ignore the historical fabrications and accidental accretions as no longer as important as they once seemed. Mistaken facts and fake reasoning should be recognized and denounced as such, without resort to contorted apologetics and without hostility. We should definitely reject what seems absurd or untenable[306]; but that does not mean reject everything. Separate the silver from the dross. For example, acknowledge the equal dignity of women where it seems to have been traditionally put in doubt.

This is of course no easy task. Should I ignore kosher dietary laws, for instance? If so, on what grounds, besides personal convenience? Perhaps, rather than abandon the laws of *kashrut*, we should opt for the more restrictive and more humane vegetarian diet (which is, incidentally, also kosher). How can we be sure that our insights and underlying motives in picking and choosing are purely spiritual? But this is the crux of the challenge for the human faculty of valuation – how to distinguish intelligence and wisdom from stupidity and folly. Purity, sincerity, lucid intuition and honest logic are needed to avoid straying.

I am clearly not here developing a defense of the conservative, reform or other such modern movements stemming from Judaism – not to mention its Christian and Moslem derivatives, nor for that matter the currently prevalent pseudo-scientific atheistic-secular religion. All of these are also deserving of much criticism, each in its own way. I am not arguing in favor of some revised intellectual construct or some new pseudo-spirituality, or increased permissiveness or novel fanaticism. I am rather looking for the intuitively obvious, the plainly true.

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[306] One rabbinical interpretation I find very difficult to swallow concerns Deut. 22:6-7 (the Biblical injunction to chase away the mother bird before taking eggs from her nest). This law on the surface appears as a lesson in humanity – i.e. not to be cruel to animals, to be mindful of their feelings too. Instead of which, the Talmud turns it into an injunction to go out of one's way and take eggs from a nest (even if one does not need eggs today!), so as to do the irrational 'mitzvah' of chasing the mother away first. They insist that this law should not be read as a requirement of humanity to animals, preferring to admit it as inexplicable. Of course, they have to do so because they defend the carnivorous view that animals may be hurt to some extent (to be sure, as much as necessary, but not more) since they are allowed as food for humans. To a naïve reader like me, the law is *conditional*: it means "*If* you seek eggs and find the mother bird sitting on them, *then* chase the mother before taking the eggs". The Rabbis change it into an *unconditional* law: "whenever you are walking in the woods, and you chance to see a mother bird sitting on her eggs, *you must* go out of your way and chase the bird from the nest and take the eggs". Which reading is more credible, do you think?

The traditions transmitted to us by our spiritual forefathers offer *pointers*. The image of the finger pointing at the moon comes to mind. Don't get too fixated on the finger, but rather turn your attention to the moon it is pointing at. Don't let the tradition enslave you and oppress you, but use it to liberate you and enlighten you. This can be a very difficult task, because everything in Judaism demands utter conformism. It takes great courage to overcome this powerful force, while remaining within its reach. To let it influence you positively, without letting it forcibly rule you.

So what if the Bible (and any other, similar text) turns out to have fictional aspects, finally? A work of fiction can inspire, too. The important thing is the transmission of spiritual truth the work intends and effects. Also, fiction is often based on facts. Indeed, fiction has to be based on some facts; there is no such thing as pure fiction. Often, fiction is the best way to transmit facts, for if they are only presented systematically in the way of dry data their soul may be lost.

If I believe in God and wish to express that belief through worship, I may find I need some sort of religious décor and scenario to do so cogently. I could "invent my own religion"[307] – but why reinvent the wheel, when I have at my disposal the venerable religious practices of my Jewish forebears or other traditions to draw from (maybe cutting and pasting a bit as seems fit in current circumstances)? Some people do make up their own religion; others prefer to just worship in tried ways.

The most important thing, I think, is to realize that spirituality is "good for you", i.e. to your advantage in a deep and long-term sense of the term. You are the manager of your destiny, and it is silly to mismanage it. Take the responsibility and evolve positively. This is a lesson that Judaism (and similar religions) can learn from Buddhism (or some branches thereof).

Judaism tends to enjoin dutiful compliance with its laws through disapproval and other heavy-handed forms of social and psychological pressure (though not exclusively). It imposes a lifelong treadmill with little room for objection. Buddhism, on the other hand, gives you a choice; it does not disapprove of you for doing the wrong things or not-doing the right things, but gently reminds you that it is foolish to behave thus and advises you to choose wisdom. The latter friendlier method of moving people seems more appropriate in this day and age.

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[307] Like Timothy Leary recommended. A recent example is *The Urantia Book*, written in the early 20th Century in the U.S. There are countless more. Indeed, are not all religions ultimately inventions of men and women?

5. The rabbinical estate

While the vast majority of rabbis are without doubt, virtuous, lovable, above-average human beings and Jews, as a professional class they can be characterized as *bureaucrats of the spirit*[308]. Their task is only to apply existing rules and regulations, not to reason why or question dogmas.

The rabbis are functionaries trained to be conventional, to conform to the Torah and past and current interpretations of it generally accepted by the profession. They are taught to function within that basically fixed framework, to rigidly relate everything they come across exclusively to it. They are taught to either uncritically repeat traditional platitudes or formulate new apologetic fabrications.

They are not allowed to doubt any traditional given – or not for longer than it takes to find the answer to their question in the traditional sources, which must be taken on faith even if they seem factually or logically inaccurate or just arbitrary or far-fetched. The rabbis have no authorization to deeply investigate or radically innovate. If they ever venture out of the fold, their peers and leaders quickly call them to order (under the eventual threat of expulsion, presumably)[309].

One result of this pedestrian and soporific education is that the rabbis cannot develop full intellectual courage and honesty. Their cognitive position is inherently flawed. They are unable to make sense of or practically handle new facts and arguments, or new historical situations, for which their closed frame of reference has left them quite unprepared.

In such cases, they respond *by ignoring facts and arguments, or by fudging and temporizing*. Unable to give reasonable answers, they simply ignore the questions posed, or promise to later answer but do not, or pretend to give answers, or enjoin "faith". And unable to take corrective actions not foreseen by the law, they pretend the problems non-existent or not as bad as averred.[310]

This is all too evident in many scientific issues, such as modern discoveries concerning the size and age of the universe or the biological theory of evolution[311]. It is also manifest with regard to the consequences of modern technological developments, such as the cruelty to

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[308] The same pejorative remark can be made regarding the similar functionaries in other religions.

[309] We saw such a case a few years ago in Israel, when no less a figure than Adin Steinsaltz was made to retract certain things he said by certain other important Rabbis.

[310] To me personally, all this has been brought home clearly by observing the absence of responses from Rabbis to my book *Judaic Logic*.

[311] These, I am sure, are never taught in yeshivot, though they might be momentarily considered and dismissed offhand if questions are asked by a student.

animals inherent in industrial farming and slaughtering or the threat to fish species caused by mechanized fishing, or again in the unchecked increase of homosexuality in society at large in recent years. But it is also true in much more banal issues.

Most rabbis I have met refuse to study modern philosophy, science and history books – not out of laziness, but out of fear of discovering errors in traditional beliefs. (Inversely, for my part, I have come to avoid the Torah study hall, for fear I might become an atheist! When I do attend a study hall, and see how little the people there know of current philosophy, science and history, and how absurd and artificial some of their arguments are, I prefer to remain silent so as not to hurt their feelings, although it saddens me.)

Saying all the above about the rabbinical establishment, I do not mean to express any personal antipathy to any individual or to the profession as a whole. I have no doctrinal ax to grind, either. I actually have much respect for my religion and its institutional guardians; I say this sincerely, without fear or diplomatic motives. I am only trying to be an objective observer and honest critic.[312]

I am here of course referring to rabbis generally recognized as orthodox or traditional, not to so-called[313] rabbis of the conservative, reform or other such dissident movements. While the problem on the orthodox side is perhaps excessive rigidity (usually), the problem on the other side is excessive laxity. The latter so dilute Judaism at their will – adapting the law to fit popular desires of the day – that there is soon almost nothing left of it. Such arbitrary permissiveness is an imposture. A middle way is necessary – a more pondered and courageous way, which takes developments in knowledge and society into consideration without going to the opposite extreme.

When the rabbinical deciders, the *poskim*, make a decision that seems overly strict – or in some instances, overly lenient – it is clear that they have done their best to conform to the givens of Judaism and to consider the human needs of Jews. I do not doubt that. They are, we might say, victims of the system. They are, understandably, afraid to sin and to cause others to sin. The narrow scope for change is almost inevitable, in view of the historical givens and structure of Judaism.

Judaism claims to have been revealed at Sinai, primarily in the written Torah, and simultaneously in the oral law (which was allegedly also given at Sinai and transmitted intact to the makers of the Talmud). None of these claims can be verified; and even when some of the content is shown to be factually or logically doubtful or absurd we are not allowed to discard it. Even if the main rabbis got together and decided things otherwise, there would always be some holier-than-thou dissenters. It is doubtful that this tragic situation can ever be remedied. Therefore, religious Jews seem condemned to suffer it to the end.[314]

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312 Needless to say, too, the problems and fallacies enumerated here are not reserved to rabbis. They can be found in other groups, whether religious, political or allegedly scientific.

313 I say so-called, because they have usurped a title that existed long before they arrived on the scene. They should have called themselves something else, if they were honest.

314 A similar doctrinal imprisonment is apparent in the Moslem religion, for the same reasons. Humans have a history, and it is very difficult for them to shake off the karma of the past.

6. Judaic illogic

I wrote a book called *Judaic Logic* over a decade ago. I named it so because Judaism does naturally involve much formally valid logical thought (like the *a fortiori* argument), and its rabbinical defenders do have a propensity to reason. But I pointed out within that same work that the rabbis also use many forms of argument that are logically invalid, being either non sequiturs or self-contradictory. This was demonstrated formally, i.e. in terms of X's and Y's – ways and means whose results are as incontrovertible as mathematical proofs. There is thus a considerable reliance on illogic in Judaism, as well as on logic.

I also showed that rabbinical logic is very often inductive rather than deductive. The rabbis themselves are not aware of that distinction, although they have actually made important contributions to inductive logic – notably with the 13th principle of R. Ishmael. This is one of the principles of harmonization, and there are other valid ones; but there are also some invalid ones. This is significant, because a conclusion may be a non sequitur in deductive logic, and yet be a valid inference in inductive logic. Moreover, a contradiction in deductive discourse might well be resolved through inductive methods. The rabbis, to repeat, did exceptionally well in such more advanced logical techniques, though not sufficiently consciously. As a result, they did not develop a fully consistent and sufficiently exhaustive system of logic.

Despite my making both important contributions and important challenges to Judaic logic, I have since the book's publication received little echo. Some academics have responded positively, but usually with some evident dread of outright public endorsement. Typically, no rabbi has either thanked me or reproved me, as the case may be. Although I have called on local and international responses in person and by mail, the response from that quarter has been uniformly evasive. Unable to answer questions or objections, they avoid the issues. That is also illogical, of course.

Informal fallacies. Over the years, I have additionally noticed many informal fallacies practiced by the rabbis. The following are some common instances I have noted in writing worth drawing your attention to.

- The rabbis often give (or accept) explanations that are in truth ***pseudo-explanations***. That is, in experience or in reason they do not explain the phenomenon at hand; but the mere fact of proposing them as explanatory discourse gives the false impression that a real explanation has been given. For example, commenting on Lev. 2:13, which states "*with all thine offerings thou shalt offer salt*", R. Ibn Ezra suggests that to do otherwise would be "a mark of contempt" (*Soncino Chumash*, p. 611). We are not here told why salt should have

anything to do with contempt; the connection between these two things is just affirmed, as if obvious once made explicit.[315]

> A more important example in today's context is the rabbinical prohibition against women getting called up for Torah reading. Although this is considered by them to be permitted in principle, they forbid it because it is against "the honor of the community" (and not for any reason to do with the dangers of men and women interacting too closely). When asked more specifically in what way that honor might be harmed, i.e. what precise content the word "honor" intends here, they can give no answer. Their argument is thus circular: it is dishonorable just because we say so. The reference to honor is a mere pretext; there is no actual reason.

- Comparable to such fake explanation, with regard to causality in an ontological sense, is the ***pretended proof*** of some foregone conclusion by means of putative premises that do not in fact logically imply it. The latter practice, which constitutes pseudo-explanation in an epistemological sense, is also often found in rabbinical discourse. Sometimes, this is due to the rabbis confusing inductive reasoning with deduction. Sometimes, they justify it by means of a known hermeneutic principle, which may be logically valid or not (e.g. *gezerah shavah* argument, based on verbal analogies in the text). And sometimes they do it with no justification at all, unconsciously or in the way of a discursive sleight of hand.
- Another common fallacy is ***inconsistent explanation or proof***. For example, the rabbis forbid eating and even drinking (with minor exceptions) before the morning prayer, saying it is disrespectful to face God with a full stomach or drunk. They also teach that the evening prayer should be recited before supper. Well and good, the explanation given seems convincing – but if it is true, why apply it only to the morning and evening prayers? Why are the additional prayer on special days and the daily afternoon prayer not so severely restricted? In such cases, the problem is insufficient effort at harmonization.
- Some legal rulings (usually claimed to have been given orally at Sinai) are based on a ***narrow interpretation*** of the motives involved in the action concerned. This is fallacious, since it disregards some factual information. For example, they forbid sitting or standing straight, on the assumption that such a posture is a sign of conceit or arrogance. Of course, this is *one* possible motive for such a posture, but others are also possible. For instance, one may consider (as meditation teaches) that an upright physical posture promotes healthy bodily functioning, expresses and improves mental alertness, and encourages moral strength and discipline. Inversely, a stooped posture does not prove one has conquered pride – it can be faked.[316]

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[315] Note well that I am not advocating contempt, but merely asking why the material called salt should be considered proof of the mental attitude of lack of respect. As far as I can see, there is no evident natural relation between these two things – so the one cannot be regarded as explaining the other.

[316] The rabbinical ideal of (Jewish) man seems to be a bent over, sorry creature – bent over by continuous indoor study of holy books and sorry for all the sins committed. The rabbis apparently resented (felt belittled by?) anyone who held his body straighter than them. Why think that G-d favors an unhealthy physical posture? It would have been enough to insist on *mental* humility and avoidance of pride when facing Him. The rabbis were factually in error to consider the upright posture as *necessarily* caused by reprehensible attitudes. They failed to observe that it can have other psychological sources, which are quite legitimate and even religiously desirable. The physical posture is just the surface effect – what matters is the underlying attitude that gives rise to it.

- Rabbinical commentators tend ***to ignore or to silently bypass questions they cannot answer***. They pride themselves on having answers to almost all questions, but that is because they concentrate only on the easy questions. The difficult questions they either do not notice, or pretend not to have heard, or avoid those who ask them. They think or say that "there is surely an answer to every such question, even if I do not know it" – by which they mean an answer necessarily in agreement with their fond beliefs, but of course such a convenient assumption is epistemologically unjustifiable.

  Obvious examples of difficult questions are all the disparities known today between, on the one hand science and history, and on the other hand the Biblical text and subsequent commentaries, such as how old the earth is, when the human species arose, and so forth. But there are also embarrassing internal problems, which are not even mentioned, let alone solved[317]. One commentary I read makes this explicit, stating that it is "forbidden" to explicitly acknowledge a textual contradiction for which no resolution is apparent, until if ever a resolution is indeed found for it (the justification given being R. Ishmael's 13th principle)[318].

- Conversely, rabbinical commentators – in particular those in the Talmud – tend ***to invent artificial problems***. For example, they rule that two priests (*kohanim*) cannot be called to the Torah reading (*aliyah*) in first and second place, because people might think the second one was called up after the first one, because the latter was found to have some inadequate credentials. Surely this is a fabricated reason, *pilpul* in the pejorative sense – for few people would ever have such a thought, and moreover the rabbis could have simply decreed that such an interpretation of the sequence was incorrect. (Note that this example also fits under the category of 'narrow interpretation' listed above.)

A major underlying cause of most of the above illogical behaviour is the fact that all rabbinical commentary, interpretation or explanation must remain within certain tacitly well defined parameters. It is forbidden to think 'outside the box'. Some thoughts are taboo – beyond the traditional bounds of 'possibility'. It is best not to ask or try to answer certain questions, so as not to risk transgressing those bounds. This is in my view a deficiency of courage, or even faith – for if one has strong confidence and faith, one confronts all challenges unafraid.

It seems to me that our religions, Judaism and all the others, must make the effort to verify and improve their logic. In the old days, most human beings were very gullible – but nowadays many are somewhat less so and this trend may be expected to continue in the future. If religion is to survive, it must adapt to human evolution and become more rigorous logically. Rather than legitimatize and perpetuate foolish notions and habits, it should be an instrument of human development and enlightenment.

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[317] See **Appendix 1** for an example of unasked and unanswered questions. In the Book of Numbers, where the Children of Israel are numbered allegedly precisely, all statistics concerning the twelve tribes and the three Levite families end in highly improbable round numbers: usually in hundreds and very rarely in tens. How can this be? Why would Moses approximate numbers, or why would God miraculously favor round numbers?

[318] I found this commentary, attributed to R. Haim Soloveitchik of Brisk, in a book called *Talelei Oroth* (vol. 1/Bereshith, French ed., p. 184). What is interesting here is that this alleged rule does *not* in fact correspond to R. Ishmael's 13th – for in the latter when a contradiction is found, *the second* proposition is adopted, until a third proposition is discovered that reconciles the first two. We see in the new formulation an explicit acceptance of conscious illogic; denial of something evident is here presented as a virtue, a proof of piety and faith, a source of pride.

I say all this, note well, not out of a desire to devaluate and extinguish religion, but on the contrary our of a desire to help it survive, for I am convinced there is much in it that is good for human beings. Religions are repositories of human spirituality, the highest values of human culture.

Judaism is like a massive engineering project, executed by countless dedicated workers. The resulting structure, let's face it, looks like a disorderly, rickety construction. Both its narrative and legal aspects have very many internal contradictions and factual inaccuracies, much vagueness, ambiguity and doubtful content, and numerous gaps and loose ends, not to mention innumerable inexplicable additives and artifices.

The whole is held together with what can only be characterized as a 'band-aid' sort of logic, manufactured ad hoc over the centuries to keep the wobbly structure from falling apart. Nevertheless, intense spirituality shines out from it, and this is of course the justification of it all.

Torah and science (*Torah umada*). The defenders of strict orthodoxy are not only guilty of logical faults: they also forsake experience when it suits them. They would no doubt prefer to be in full accord with both logic and experience, and we would equally wish them to be, but they are sometimes forced to abandon one and/or the other, so as to keep their Torah and halakhic assumptions intact.

A good example[319] of this is the issue of "rich *matza*", bread traditionally alleged to be unleavened because it is produced with pure fruit juice. According to authorities (namely Tosafot) such bread is unleavened (not *hametz*) provided no water has been added to it, and can therefore be owned and eaten during Passover. However, modern science informs us that fruit juice is just water mixed with fructose, so that it contains about as much leaven (a tiny fungal microorganism) as pure water. This can be demonstrated by experiment and is not open to doubt.[320]

Thus, scientifically, the exemption from hametz status to rich matza would seem to be based on a factual error – and Jews who own and eat such food during Passover would seem to contravene, with orthodox rabbinical permission, a clear Torah interdiction. However, rather than objectively adapt to evolving empirical knowledge, the halakhah is maintained as is. This is understandable, in that to deny a ruling of the authorities concerned would be put all their many other judgments in doubt.

When I confronted the Chief Rabbi of Geneva, R. Yitzhak Dayan, with this conundrum, he gave me an interesting reply. He said, as I recall, that whatever the halakhah declares kosher or hametz is and was always so. As I understood it, he meant that even if pure fruit juice in fact contains leaven, rich matza remains kosher for Passover – because the original law concerning

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[319] Recently gleaned from an interesting article by David Kessler, published in *Higayon*, vol. 3 (1995) – "Review Essay: *Torah and Science* by Judah Landa". He gives other examples, too. For a more complicated example, see **Appendix 2** to the present book.

[320] One rabbi suggested to me that even if the quantity of leaven is about the same in pure fruit juice and in water (or likewise, fruit juice mixed with water), perhaps the leaven does not actually raise bread when it is in fruit juice. Well, that is not unthinkable – but it is in any case easy to test experimentally. Prepare two loaves of bread, using equal quantities of flour and the two liquids, and see for yourself whether they rise to the same extent or not.

hametz given in the Torah *must have tacitly intended as an exception* the leaven found in such rich matza.

In other words, though the original law may seem general on a literal reading, it may be interpreted ex post facto as having been more particular than it seemed. That is to say, when the Torah told us not to have or eat leaven during Passover, it did not regard all the microorganisms we ordinarily call 'leaven' found in rich matza as leaven in a legal sense. The term used is the same, but it does not designate exactly the same set of things. For the scientist, all leaven counts as leaven. But for the halakhist, only that which the halakhah has come to designate as leaven is effectively so.

This is *prima facie* not an unreasonable position – indeed, it is consistent with the blanket authority seemingly given by the Torah to future rabbis (Deut. 17:8-13) and with the general rabbinic principle that whatever the deciders decide is the law, even if they seem to call the left right and the right left (see Rashi to Deut. 17:11). It is also consistent with the traditional claim[321] that the whole Oral Torah was given at Sinai together with the Written Torah.

Still, we may wonder whether the deciders concerned (viz. Tosafot, in this case) would have had the same judgment if they had known then the empirical facts about leaven known today. For it is clear, nonetheless, that in their mind's eye there was no leaven in fruit juice so long as not a drop of water was added to it.

To those of us attached to rationality and empiricism, the rich matza exception was historically based on inaccurate assumption concerning a purely physical thing or event. But (seemingly to us) the halakhists are quite satisfied with artificial constructs, based on arbitrary definitions that have relatively little relation to Nature as ordinarily understood. What distinguishes the leavening agent found in water from that found in pure fruit juice? Scientifically, nothing at all, they are composed of the same organisms; the only difference between them is the environment they happen to be in. But for Jewish law, that is enough to distinguish them.

It is hard to prove that this was not the original intent of Torah law, if the literal reading is not given unconditional credence. Moreover, note well that in this instance, the literal reading is abandoned without seeming reason – no contradiction with another Torah passage or other technical difficulty is involved, which makes such reinterpretation necessary. There is only a rabbinic statement that suddenly appears in the history of halakha out of the blue, and is thenceforth defended tooth and nail.

As regards the claim that even if the rabbis call left right and right left they must be followed, this might be justified with reference *personal opinions, speculations or acts of faith*, on the grounds that the subjective judgment of Sages (who are in principle more spiritually pure and less influenced by passions than common men and women) is more reliable. But in the case of *publicly demonstrable facts or scientifically induced laws of nature*, no such superiority of judgment can reasonably be appealed to by or in the name of any rabbi, however elevated his halakhic authority; it is simply an issue of objective truth.

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[321] This claim was developed, if I rightly recall, by Saadia Gaon, to defend the oral law and traditional interpretations of the Torah from Karaite critics. I personally regard it as a myth: as I argue in *Judaic Logic* it seems historically evident that the tradition has evolved (grown, and to a lesser extent changed somewhat) over the centuries and millennia of Jewish life.

What is perhaps needed here is an understanding that judging matters of fact or of logic is not ultimately something open to subjective preference; our attitude should be as objective and impartial as possible. We should cultivate the same attitude and sense of responsibility in all issues as we would if we were a judge or member of the jury in a capital case. For ultimately, everything to do with religion, philosophy or science is a matter of life and death.

7. Jewish meditation

Current teachings. I read R. Aryeh Kaplan's book on "Jewish meditation" some time ago, and was rather disappointed. Such writings are in my opinion based on readings, intellect, wishful thinking and fantasies, rather than on actual personal practice of the art. Meditation cannot be guided by ideology, but must remain a free process of exploration and discovery. It does not consist in imposing some idea or belief on the mind, but in becoming convinced by actual personal experiences. The writer on meditation should write in the first person and tell what he himself has observed, rather than base his pronouncements on authorities.[322]

It is true that the *heshbon nefesh* (accounting of the soul) is a practice crucial to Judaism. In particular, during the month of Elul leading up to the days of awe (new year and yom kippur), we are enjoined to and do examine our thoughts, words and deeds, and take stock of our many vices and deficiencies of virtue. Kaplan also mentions the practices of *hitbodedut* (self-isolation) and *hitbonenut* (self-understanding), recommended by some Hassidic schools (such as the Brezlav Hassidim). But, though these practices are undoubtedly valuable for self-improvement, can they be counted as meditative?

If meditation is understood in the general sense of increasing one's awareness, then yes such practices are meditative. They increase self-awareness of one's actual situation and behavior, making possible comparison to Jewish norms, and thence self-perfection. But though such psychological and ethical work on oneself is of great importance, what makes it seem not quite meditative in my view is the fact that in Judaism it is *very verbal and judgmental*. Of course, beneath words and ethical judgments are wordless intentions and frank observations – but the level of consciousness involved in these processes seems very ordinary.

More broadly, set prayer and Torah study (including learning the Talmud and subsequent rabbinical commentary and law, of course) could be considered as forms of meditation, insofar as they involve sustained mental concentration. However, here too the centrality of words and rational judgment implies a structural limit of sorts. Also to be noted is the aspect of indoctrination, forcing one's mind into a given groove, these activities involve. Even so, undeniably, these activities do have a very powerful spiritual effect. For instance, on yom kippur one truly feels the opening of the Heavens to prayer.

To my mind, meditation in the loftier sense refers to a process or exercise that raises one's level of consciousness in a significant manner. That is, rather than having to artificially

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322 It is true that, though Jewish (and indeed a practicing Jew), I am more attracted to Eastern meditation practices, because they are more empirical than rational. However, if you read my work, you will see that I always remain lucid and critical of Eastern philosophy too.

reprove and fight oneself to change one's behavior, one quietly acquires a higher way of seeing things which makes one's behavior naturally change for the better. This is due to the new vantage point that the neutral meditation practice (like *zazen*) gives us, which makes one see for oneself without ideological prejudices that one's old desires and values were worthless and one's past behavior was foolish and vicious.

Meditation makes possible a quantum leap up of consciousness, which allows us to transcend our passions. Meditation produces personal insight that removes the desires that make one act foolishly, and thus greatly facilitates self-mastery. True meditation, then, treats *the root* of misbehavior, and not merely *the superficial fact* of misbehavior. It does not consist in self-reproof and self-forcing, but effects lasting deep down solutions of the underlying problems, dissolving them.

On this basis, I would like to debunk the myth that meditation in this sense exists in Judaism today. I have not seen it, not even in Hassidic circles I have visited occasionally. If any religious Jews practice silent meditation, they are very rare indeed. And if any do, one may wonder how many of them were actually directly or indirectly influenced in this regard by Oriental philosophies/religions. They would likely refuse to admit it, because foreign influence is severely frowned upon in Judaism.

I do however believe Jews in the past have practiced silent meditation. Reading the books of the Bible known collectively as the *Nakh* (the Prophets and Writings), it seems evident that 'prophecy' was not merely practiced by the famous, great prophets. There were schools of prophecy and groups or communities of prophets. If prophecy was taught and consciously pursued, it is reasonable to suppose some sort of meditation practice was involved if only to purify the mind of extraneous mundane thoughts and consciously direct it heavenward. Kaplan, as I recall, mentions meditation as a preparation to prophecy.

Looking at more recent times, there are also indices that meditation has been practiced. Once, in Sfat, while on a guided tour of the home of R. Joseph Caro, I was told by the guide that mystical Jews like Caro[323] used to sit silently for an hour before beginning their prayers, to develop their *kavanah* and awareness of God's holy presence. Now, that would be true meditation in my view! If this practice has indeed existed, it should certainly be revived. It is sorely needed in today's Judaism, which (it seems to me) is excessively verbose and stressed-out.

What it is. Silent meditation is not a waste of time, as some seem to think. It increases the power of consciousness, in breadth, in depth and in intensity. This means: in prayer, more honesty, sincerity and intensity; and in study, more concentration and insight. Likewise, one becomes more honest with oneself, with other people and with God, meaning what one says more, doing one's best more, stronger in resolve and in discipline, and so on. By getting into a more profound and pronounced intuitive contact with oneself, one develops greater self-knowledge (in a non-narcissistic sense of that term, of course), and thence one's intentions and actions become more real, pinpointed and powerful.

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[323] J. Caro (b. Spain, 1488 - d. Israel, 1575) is best known as a major Talmudist and the author of the code of Jewish law called the *Shulchan Aruch*. But he was also, together with most of his contemporaries, especially in Safed, a kabbalist, who reported having many mystical experiences.

Silent meditation may be viewed as an act of *imitatio Dei*. Just as God is silent, or talks rarely and little, so should we strive to do. There is surely something neurotic in excessive verbal discourse, inside us, between people and in relation to God. More often than not, words hide rather than reveal the truth. Even in prayer, they can often act as a smokescreen concealing our true thoughts, motives and intentions – from ourselves, if not from God. They often express wishful or dutiful thinking rather than actual insight or belief. By silently meditating on the here and now for a good while, we 'tune in' to God's silent presence.

But, note well, meditation is not a religious ritual; it is simply "to be with what is" – it is "nothing special"[324]. On this basis, I advocate what could be called "Zen Judaism". Let us add Zen (i.e. meditation[325]) to Judaism, and it will greatly improve[326].

Such addition would not be a threat to normative Judaism, but enhance it. We should not reject silent meditation as a foreign influence, and therefore something necessarily tainted and flawed. That would be really foolish, like rejecting some modern medical technique simply because it was not developed by a (religious) Jew. Let us not commit the fallacy of *ad hominem*. A person presumed deluded often has misleading ideas – but not always. Although some people who may be accused of idolatry engage in meditation, it does not logically follow that meditation is idolatry; it has in fact nothing to do with it.

Judaism already has many ideas that are in fact also found in other philosophies or religions. This is natural – just as we all breathe the same air. In some cases, the ideas may have migrated from Judaism; in others, they may have migrated to it; in others again, it is hard to say who influenced whom; and in others still, similar ideas may have been independently developed by both sides. I am not an expert on history, but over the years I have read about such apparent movements of ideas or myself noticed them in passing[327].

Because these events are lost in the hazy past, and we can no longer determine which came first, the ideas concerned today seem kosher to orthodox Jews. They can claim them to be of Jewish origin, without fear of being easily proved wrong. But they refuse to accept new ideas of evident foreign origin. That is silly, because the truth or worth of an idea certainly does not depend on its originator, but on its own merit – its intrinsic qualities. The wise man is always willing and eager to learn, from whoever has something of value to teach him.

The bottom line for any proposed import is the effect it can have on the faithful. At the synagogue, I look at my fellow Jews, and I reflect how each one would greatly benefit from meditation. This one to be less conceited; that one to be less often angry; that other one, to find more energy and confidence; another, to slow down a bit; and so forth. Judaism teaches us many virtues, but does not give us the practical tools for implementing those teachings. Meditation provides the means for self-improvement.

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324 I am here quoting two meditation teachers: respectively, Paramananda, p. 175, and Shunryu Suzuki, p. 46.

325 *Zen* is a Japanese word meaning meditation. It comes from the Chinese *ch'an*, which comes from the Sanskrit *dhyana*.

326 I would similarly advocate Zen Christianity and Zen Islam, to improve the tone of these daughter or sister religions. Note also, the converse expression to Zen Judaism, viz. "Judaic Buddhism", would have a different sense; it would mean adding Jewish monotheism to Buddhism.

327 Offhand, I can mention for example the "emanation" theory that Judaism is considered to have inherited from Neo-Platonism. Also, recently, in an article on Gnosticism, I saw mention of "trapped particles of spirit" which reminded me of "broken vessels" theory by the Arizal.

Meditation on others. An aspect of meditation I rarely mention, perhaps because I am an individualist at this time of my life more than any previous time, is consciousness of other people. In truth, we all think a lot about other people, even if only in the background of our mental life. Our mental life is very social even in solitude, even if we are not lonely. We may think of people by way of reminiscing past encounters, or by projecting new encounters. In the latter case, we may imagine different situations and rehearse what we will say or do in relation to the person(s) involved. Often, we behave as if we believe in telepathy, speaking to people at a distance in one's head or out loud (even though they cannot physically hear us).

Whenever we think of other people in any way, we are (if only by implication) aware of them as other entities with consciousness, and with a will and values of their own. This object of everyday awareness can and ought to be made one of meditation. That is, in addition to awareness of one's immediate surroundings, one's body, one's mental life, one's consciousness and one's self – one should also become aware of the many people that lie beyond one's field of perception. Solipsism is a philosophical possibility, but a very unlikely one. We are not alone, and cannot possibly understand our personal existence without considering its manifold relations to the existence of others.

We are not speaking here of inanimate matter or even of vegetation, note well, but of other subjects with the power of consciousness. This means mainly other people. But by extension it can also mean other animals, though to a far lesser degree of course. And by further extension it can also mean (for those of us who have faith in this) – God.

The relation of our consciousness to that of other people (or other animals) may be conceived as structured like a network (at least at ordinary levels of consciousness). But the relation of our individual consciousness to the universal consciousness of God should rather be conceived as one of (very tiny) part to the (very great) whole. We may suppose that the consciousness of God underlies and embraces the mutual consciousness of us lesser beings. So to become conscious of God is doubtless a lot more difficult, for a tiny and superficial thing is trying to reach out to something far greater and deeper. Moreover, it is doubtful we can be truly conscious of God (within conceivable limits) if He does not specifically permit us to.

Thus, consciousness of God can be viewed as one aspect of the meditation on consciousnesses other than one's own. Still, our main concern here, at least at an early stage of meditation, is with meditation on other people. Becoming and being aware that we live in a world of people. This is not merely a biological and sociological fact – it is a psychological fact. Other people are constantly impinging on our consciousness in many ways – and it is important to notice this constant impact and examine its variegated outcomes. It is amazing, for instance, how thickly populated our dreams can be at times – much more so than our life while awake!

The effect of people on our internal as well as external lives is sometimes beneficial and sometimes harmful, and of course also sometimes indifferent. We owe a great deal to others (our parents, our teachers, our community leaders, our social services, and so forth) – no man is an island unto himself – and we should modestly be aware of our debt and feel appropriate gratitude. The opposite attitude is conceit and arrogance – very undesirable attributes. To be thankful is to realize one is loved (in some sense, to some degree) and to love (ditto) in turn. And that means to show others as much friendliness as one can, and to support them in accord with one's abilities and as much as one can (though without self-destructive extremism).

With regard to negative factors, one has to of course try to understand them before one can neutralize them. Often, the fault is one's own – i.e. other people have a negative effect on one because there is some sort of flaw in one's 'way of being' – and one has to find out how to correct one's attitudinal and behavioral errors. No doubt, too, the fault is often in the other person(s) concerned – other people are fallible too – so our job is to find a way to deflect their negative impact on one, if only by avoiding them (if possible). In any case, the meditator stays aware and cool, and seeks solutions to problems (at an appropriate pace).

The Buddhist meditations in relation to other people (and more generally, other sentient beings) are of course admirable – and no doubt very effective over time at healing many personal and social wounds. I refer here to the cultivation of loving-kindness (*metta*), compassion (*karuna*), sympathetic joy (*mudita*) and equanimity (*upeksha*).

I think they are not so easy to put in practice if taken to extremes, but some people seem to adapt to their demands pretty well. I personally find they do increase my sensitivity, but also my vulnerability. My intentions may be beautiful, but my neighbor may continue to behave in his usual uncouth manner. I may change, but others seem to remain the same and to be now more able to hurt me. Not so pleasant. Of course, all such difficulties are part of the process of spiritual growth, till the right posture is found and one becomes immune.

The important lesson to learn from these four meditations is that one's attitude towards other people can be improved by training, and that such change for the better in one's internal dispositions and behavior patterns 'changes everything' in one's actual relations with others. At the least, it will improve our relations. Ideally, it can 'save the world' from hatred, fear and conflict and institute instead a régime of love and mutual help. "Love thy neighbour as thyself" saith the Torah (Lev. 19:18) and many other wisdom books.

Meditation on God – on His presence, His attributes, His beneficence towards us – is of course a higher stage than that and more difficult to achieve. But if instead of seeking God only outside and beyond oneself, one looks upon Him as the root of one's spiritual core – i.e. if we think of ourselves as being "in His image and likeness", as essentially one with Him – we may perhaps find it a little easier to approach Him.

8. Enlightenment without idolatry

The phenomenal self. When Buddhists speak of one's 'consciousness' or 'mind' they are often referring to what could be described as one's sphere of experience at any moment. Moment after moment, all around the central point where cognition actually takes place, there is a cloud of phenomena: bodily sensations and sentiments, appearances of surrounding sights and sounds, and mental images and sounds, verbal and non-verbal thoughts, and moods. It is important during meditation (and eventually, beyond it) to get to be and to remain aware of this totality of variegated experience, and to realize the great weight of this experience in one's life.

According to Buddhists, this phenomenal mass is all there really is to one's life – and thence they conclude that there is no self. This phenomenal cloud, they claim, is what we call the self, it is the whole of the self. Moreover, according to the Yogacara school, this cloud is *only* mind (since, they argue, all experience is necessarily mediated by consciousness). But I beg to differ on such views – and claim that we must pay attention to *the center* of that sphere of experience too.

At the center is the self, the one who is experiencing. This Subject experiencing the changing phenomenal objects is the real meaning of the word self. It is a non-phenomenal entity, who is not experienced outside itself, but is known to itself by intuition. That is the soul or spirit. Buddhists philosophers deny it, but I am not convinced by their reasoning. Even so, I am convinced that Enlightenment is (as they claim) the central goal of human existence – the meaning of it all.

The Jewish core value is, of course, service of God, i.e. fulfilling the commandments given in the written and oral Torah. But, it seems to me, the higher one tends spiritually, the better one can fulfill such a mission. Enlightenment means the perfection of wisdom. So there's no contradiction between these values. The more perfect the tool, the better it does the job.

The value of Enlightenment. The Buddhist idea of Enlightenment (*boddhi*) is one of its great contributions to human aspiration and inspiration. I would like Judaism to more consciously value and pursue this goal, through meditation. Of course, Judaism would never accept the idea that Enlightenment makes one a 'god'. I agree with this crucial caveat.

There are some significant points of similitude between the Judaic-Christian-Islamic group of religions and the Hindu-Buddhist group. One point all (or at least some schools in all) might agree with, is the notion that we are all rooted in an infinite God or Original Ground and that

we will all one day return to this Source. Indeed, these grand religions may be viewed as teachings on how to prepare for or accelerate such a return.

Now, both groups would consider that when an individual human manages somehow to merge back into God (or whatever the Source is called), God remains unaffected, i.e. nothing has been added to Him. From the latter's viewpoint there was never separation, no breach of unity. Where the two groups would differ, however, is in the status acquired by an individual who fuses with the Deity. The religions of Indian origin would regard such a person as having become a 'god', or even identified with the one and only God; whereas the Middle Eastern religions would consider the individual as ceasing to exist as a distinct entity.

I would refer to the tacit image of a drop of water flowing back into the ocean: certainly, that drop loses all 'personality', and moreover it becomes a mere part of and does not become equated with the ocean as a whole.

The Jewish religious way often seems like a constant hectic rush to perform countless rituals. It seems intended to keep you busy and stressed, as if agitation is proof of devotion. Set prayer sessions, some of them hours long, obligations to study without time limit, and many other demanding duties fill the days, evenings and weekends of those who faithfully follow this way.[328]

Although that way gives one some satisfaction, if only the feeling of having a good conscience, if one has done all that needed doing fully and correctly (which is not always easy), it cannot be said to bring peace of mind in the sense of cessation of "running after" things. Indeed, some commentators boast of this:

> *The Jewish approach to life considers the man… who has a feeling of completion, of peace, of a great light from above that has brought him to rest—to be someone who has lost his way.* (Adin Steinsaltz, p. 99)

Such an attitude is, in my view, an unfortunate devaluation of Enlightenment. In fact, it is a sort of cop-out: the rabbis, admitting that the way they have developed is unable to deliver the inner contentment and illumination all human beings yearn for, present this restlessness as a virtue above peace.

The missing ingredient here, it seems to me – what is needed to slow things down and give us time to breathe is – still and silent meditation. I here quote the 6th century CE Indian mystic and founder of Chinese Zen, Bodhidharma (p. 49):

> *Not thinking about anything is zen. Once you know this, walking, standing, sitting, or lying down, everything you do is zen...Using the mind to look for reality is delusion. Not using the mind to look for reality is awareness. Freeing oneself from words is liberation.*

Traditional Jewish observances do on the whole perform their function, which is to bring us closer to God. I believe that sincerely, which is why I personally continue to practice Judaism

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[328] I should also mention, here, how we are sometimes (e.g. late at night at Pessach) required by the law to eat and sleep at unhealthy hours, not to mention the consumption of unhealthy foods and drinks (meat and alcohol). Moreover, little allowance is made for fresh air and regular exercise. The natural cycles and needs of the human body are too often overlooked.

and recommend it to fellow Jews. However, sometimes I get the impression that Judaism obstructs or blocks one's natural personal relation to God.

The main problem in my view is the 'commandment' format of Jewish law, which results in its excessive ritualism and legalism and almost non-stop verbosity. Jews are constantly in the position of slaves receiving peremptory orders under threat, rather than of free men and women kindly advised to voluntarily act in wise, objectively good and naturally virtuous ways. The commandments seem too often of uncertain value, if not contrary to reason; and those who object to them are viewed with much disapproval. It is argued that since these are God's orders, they must be wise imperatives; but their lack of evident wisdom in some cases makes their alleged source doubtful to some people.

At such times, it is actually meditation that keeps me going in Judaism. Thanks to it, I do not attach much importance to the imperfections I perceive in it, and remain focused on what seems to me the essential: getting personally closer to God.

Against Idolatry. Idolatry is clearly forbidden by God to Jews in the Ten Commandments[329]. God is to be the one and only object of worship – there is no other "god" by His side or in opposition to Him to worship.

Moreover, God does not "incarnate" in human form, or other material body or ghostly form of limited size; the very idea of incarnation is idolatrous. We are therefore forbidden to mentally worship any putative god or incarnation through belief, fear or love. All the more so, we must not physically worship any representations of alleged gods or incarnations, by bowing before statues or flat images or movies and similar acts. This interdiction obviously suggests that the worship of images of any alleged divinity or even of the true God is spiritually extremely damaging, in this world and/or the next.

According to the Rabbis, the interdiction of idolatry applies not only to Jews but also to Gentiles. It is one of seven Biblical commandments intended for the "Children of Noah" (i.e. the non-Jews, or Gentiles). This is stated in the "oral law" and subsequent rabbinical commentaries. In that case, Judaism may be regarded as categorically rejecting all religions that involve idolatrous beliefs and practices to any degree. Similar teachings are in principle found in Islam, no doubt thanks to Jewish influence.

With regard to Christianity, the issue is more complex, however. Some Jewish commentators (Maimonides comes to mind) appear to class it as a monotheistic religion. They argue that Christians *intend* to worship the formless one and only God, even as they worship alleged incarnations of God (the Son, the Holy Ghost) by prostrating themselves before images and similar acts. Most Christians would agree with this assessment, and class themselves as monotheistic. In my view, certain aspects of Hinduism and even Buddhism may be similarly classed as ultimately 'monotheistic' in intent or in effect.

It would clearly be preferable, however, from a purely rational viewpoint, if all religions eschewed all thoughts or acts that could be regarded as idolatrous from their curriculum.

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[329] The issue of idolatry in Judaism is a complex one, and I do not pretend to know all its ramifications. The present remarks may well go beyond the letter, into the spirit, of Jewish law. They are intended as an independent, philosophical analysis, not a religious legal opinion.

9. Good people

Discriminating between good and bad. "May all people be happy!" say the Buddhists. In my Jewish view, this Buddhist wish should be understood in proper sequence. Not as an indiscriminate, unjust wish that all people *as they are* be happy now – for then evil people would get away with their evil! Rather as a wish that such people change for the better, and when they thus earn happiness it will come upon them. This is similar to the Talmudic story of a Talmudic rabbi who was told by his wife (if I remember rightly) not to curse evil people out of this world but to wish evil to depart.

And really, I think that is what the Buddhist expression is intended to mean. For Buddhism does not consider that happiness will befall anyone *contrary to their karma*, but rather that anyone *who attains enlightenment* will find 'happiness' therein. For they will then have lost their ignorance, and the intrigue and violence it generates, and their problems would disappear. Thus, the pious wish should more accurately be stated as "May all people attain enlightenment!" – and in this non-provocative form, who would oppose the idea?

Of course, the issue remains: can all people indeed become good? Supposedly, if we all proceed from the One, we can all return to the One – so Buddhism would apparently say.

On the other hand, would we want a Hitler to ever redeem himself – should there not for him and the likes of him be no redemption ever?

The good man. The good man[330] is of course a strong man, in the sense of someone with a power of will sufficiently developed to overcome morally negative influences and temptations, and forge ahead towards morally positive ends. He has character; he is not at the mercy of chance impulses within himself.

However, such strength of character is not his deepest secret. His true power is his moral intelligence – viz. his understanding that the good is valuable and the evil is valueless and counterproductive. He is not fooled by illusory attractions or repulsions. It is for this reason especially that he does not find it so difficult to avoid evil and pursue good.

That is, through lucid insight, the good man neutralizes the power of negative influences to slow him down or arrest him, and enhances the power of positive influences to facilitate his way towards spiritual success. He is consistently wise: he is not moved by the mirages that the evil impulse presents him, but on the contrary empowers his better side. He never dithers between good and bad.

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330 Or good woman – here the term 'man' is intended as meaning 'human being'.

By way of contrast, the spiritually low or evil man is basically stupid. He convinces himself (sometimes through superficially clever intricate arguments) that evil is attractive and good is unattractive – and for this reason he is overwhelmed by evil and uninterested in good. Alternatively, he mentally places good and evil on the same plane. It is he, by his own twisted imaginations, who has given evil power over himself and weakened his native goodness.

Thus, the virtuous man is not victorious so much due to exceptionally strong will, but because of his perceptiveness and wisdom, which render his ordinary strength of will more easily effective. The wicked man, on the other hand, has woven for himself such a *delusion* about the value of evil or non-value of good, or through doubt, that he weakens and incapacitates himself in any attempt to avoid evil and do good.

I thus, in the last analysis, agree with the Buddhist idea that the root of evil is essentially a *cognitive* failure – a self-inflicted fiction, illusion, foolishness and stupidity. The volitional problem behind moral failure is relatively secondary; it is subsidiary to the weakening of self and strengthening of obstacles due to erroneous convictions. For this reason, meditation and sound reasoning are both essential antidotes.

This explains why the perfect man (the *tzadik* in Judaism or the enlightened man in Buddhism) is said to be free of good or evil. This does not mean that he is morally permitted to do evil, but that he has no desire to do evil. And this does not mean that he is forced deterministically to do good, but that he clearly sees that evil is without interest and stupid. Thus, he never falls into vice or fails to be virtuous, *not because he lacks free will*, but because of active moral intelligence.

This conception of morality can be clarified further by considering the extreme case – that of God. We conceive of Him as having Omnipotent free will, and yet as never committing evil or even abstaining from good. These characteristics are seen as mutually consistent, if we understand that God is obviously not forced by anything (any deterministic force or influence on His volition) to be Perfect, but being Omniscient and All-wise He is simply never fooled by evil and is anyway always more than strong enough to overcome its superficial attractions. For this reason, it is safe to say that utter goodness is the 'nature' of God, without thereby implying that He is at all determined or influenced to so act. Even though he always opts for the good, it is always a free choice of His.

We must try to tend in that direction, following the principle of *imitatio Dei*. The tzadik is someone who has found the spark of Godliness within him to such a degree that he naturally acts in perfect accord with that principle.

The danger of religiosity. Though religions are in principle intended to improve people, religion can sometimes be an obstacle to self-improvement, because it may give us a false sense of perfection. One seems in accord with its essential demands, and so comes to ignore 'little imperfections'. Our shortcoming may be improper social behavior, i.e. lack of respect, consideration, politeness, and the like (what is called *derekh eretz* in Judaism); or perhaps a holier-than-thou attitude or a more pronounced form of fanaticism.

This observation is nothing new. Many people steer clear of religion precisely to avoid such ugly side-effects of it. We see around us, and history has often shown us, many cases of this disease – in Judaism, in Christianity and in Islam, and no doubt likewise in the other religions.

To be fair, such unpleasant aspects of religiosity sometimes emerge from secular philosophies or from science. Conceit and arrogance are not the monopoly of any single doctrine.

The truth is, all religions and all philosophies (including science) *are part of 'samsara'*. They can help us approach 'nirvana', but they cannot take us all the way there. They are intrinsically flawed by their format as rational and volitional pursuits – whereas true transcendence requires a sort of fundamental 'letting go' of this world and one's place in it. So, whatever doctrine one adheres to, one should not allow oneself to be blinded by it. It is always a means, not the end.

10. A world of mercy

There is a Jewish doctrine according to which this is a world of mercy (tempering justice), whereas after death we go to a world of (strict) justice. One's first reaction to that claim might be: 'what, you call this a world of mercy?' Yes, the idea here intended is that the sufferings we go through in this world are very light compared to what we justly deserve. Thus, we are better off paying off our debts by suffering in this world, rather than having them exacted off us in the next world. For there, the full payment will be required, without mercy.

The teaching here taught is that we should take advantage of the opportunities for redemption offered to us by this world, because here we have freewill and can repent and do good deeds. Whereas, in the world after death, we can no longer fix our errors or perform positive *mitzvoth* (duties), but must passively receive whatever we have coming. Thus, this is a teaching designed to push us to act while we still have the chance to do so.

This idea is comparable to the Buddhist doctrine that to be born as a human being is a very exceptional opportunity to attain enlightenment/liberation (*nirvana*). Such a chance should not be wasted on vanities or in negative activities, but one should strive positively for removal of bad karma and for spiritual growth. Otherwise, next time one may be reborn in a less favorable estate, and become stuck in the cycle of *samsara* (birth and death, implying suffering) for eons.

Needless to say, one can see in this context the stupidity of suicide[331]. According to this teaching, such an act is not an effective way to escape from one's difficult situation, but only a way to make matters worse (in the hereafter or the next life). Trying to avoid challenges is useless and counterproductive. One should always bravely face the difficulties of life and cheerfully try to improve one's situation as well as one can. Life is certainly a great gift. And time passes so quickly.

Lately, the media fashionmongers have started pushing relentlessly in favor of voluntary euthanasia or 'assisted suicide'. Most Western countries have already made passive euthanasia (i.e. withholding life support) legal, and now some have legalized active euthanasia (i.e. killing) and the issue has become hot in most others. The advocates of this social innovation make it seem like an act of mercy – parading some people with terribly painful incurable diseases to excite our pity. These advocates are of course materialists, who do not believe in any sort of afterlife or rebirth.

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[331] I mention this, due to reading often lately about youths – in Japan, in Britain – committing suicide. No doubt they feel afraid of life, and presumably have been given no spiritual education that would give them the strength and courage to face it.

They do not consider that it may be more merciful to allow the sufferer's bad karma to play itself out on this earth in this lifetime than to artificially cut it short. They do not consider that things might be worse thereafter, precisely because the karma was not allowed to play itself out. How do I know? I don't! But do they? Certainly not! They have no sure knowledge either, only mere speculations.

Moreover, the advocates of euthanasia do not really consider that helping someone commit suicide for whatever motive might still be murder. They are usually the same people or type of people who legalized abortion on demand, indifferent to the suffering and privation of life of the babies killed. They are close to those who support homosexuality, and in particular the adoption of children by homosexuals. They are people who consider their pursuit of any pleasure or avoidance of all pain as unquestionable absolutes. They do not acknowledge that we may earn certain pains or have no right to certain pleasures. They have little or no regard for spirituality or ethics.

And they have nothing to offer the suffering souls other than a quick and supposedly painless death. At least religion offers hope of cure or redemption. In situations of great suffering, why not try prayer and repentance? It might help, psychologically if not existentially. Also, when possible, try meditation.

11. Understanding injustice

Justice occurs when you do some good or bad – through intention or some other mental act, through speech or some other physical act – and you get back what you deserve in relation and in proportion to that deed. Injustice means that some good is not followed by commensurate good or is followed by undeserved bad; or that some bad is not followed by commensurate bad or is followed by undeserved good.

Thus, justice and injustice are concepts depending on our notions of what deeds are good or bad, and of what is deserved or undeserved in relation and in proportion to them. Our 'perception' of justice or injustice has an emotional effect of its own on us. Note first that since justice and injustice are essentially rational judgments, the word 'perception' here may be misleading. We indeed perceive the situation, but its evaluation as just or unjust of course depends on a conceptual process.

When we rightly or wrongly perceive justice to have occurred, we feel comforted and pleased. Inversely, when we rightly or wrongly perceive injustice to have occurred, we feel threatened and angered. (Note the acknowledgment that such judgments may occasionally be in error; there is no guarantee of correctness.)

Because perceptions of justice or injustice strongly affect us, it is important to understand these concepts. Such understanding has a calming effect on the mind, and even on the soul. Religious doctrines such as that of Divine justice (under the religions based on Abraham's monotheism) or that of karma (under Hinduism and Buddhism) were certainly designed to pacify us in this regard. But before we consider[332] these doctrines, a number of philosophical reflections are worth making.

Justice and injustice are not concepts relating to a wholly mechanistic world. Under a universal system of determinism and/or spontaneity, nothing is either just or unjust, everything just 'is'. Moreover, there being no conscious living being to feel effects or evaluate them, these concepts are irrelevant and inapplicable. In a world with only God – i.e. Someone omniscient, omnipotent and perfect through and through – there is automatic universal justice and no injustice at all.

The concepts of justice and injustice logically both come into play only in a world containing any number of living entities endowed with limited consciousness, volition and powers of valuation. That number could be only one, provided that single entity is not God, i.e. is a mere creature with limited powers (this could be assumed under a solipsist philosophy). But

[332] Or reconsider them – for I have commented on this topic in many of my past works. Here, I seek to bring additional clarifications.

actually, our world seems to have many such entities, with some powers of cognition, freewill and valuation (there are apparently at least 6 billion humans who would fit this definition, not to mention other animals).

This insight – that *the concepts of justice and injustice depend on there being some non-mechanistic and less than Divine entities in the world* – is valid whether considered in the framework of atheism (as in modern materialism or in early Buddhism) or monotheism (as in Judaism, Christianity and Islam). It is all the more valid under polytheism (as in Hinduism, in some forms of Buddhism, and in other religions), since such religious form by definition involves numerous competing wills.

If for the sake of brevity we refer to the entities under consideration as entities with freewill (since this power presupposes consciousness and implies valuation), what we want to stress here is that **some injustice is inevitable in a world with competing wills**[333]. In a world without will at all, there is neither injustice nor justice. In a world with only God having will, there is only justice and no injustice. It is only in a world like ours that injustice occurs – and indeed, injustice is bound to occasionally occur in it.

Once this principle is comprehended, it is much easier to emotionally accept the existence of injustice. The existence of injustice in the world is not because the world is badly constructed or mismanaged – but is a *logical inevitability* given the existence of a multitude of competing entities with limited powers of awareness and will.

Granting God created the world and us in it, He could not have made it otherwise. To give us some powers of will, He has to abstain from exercising His full power of will (omnipotence). To have freewill is to be able to do good or bad – i.e. not to do the good one ought to do, on occasion; and even to do the bad one ought not do, on occasion. Even if some people were to always do only good, there is every likelihood that some people will occasionally do bad or not do good, or simply make mistakes.

This is equally true in a belief system devoid of God (which many people favor nowadays). In a mostly mechanistic world containing some entities with some powers of freewill, such entities are not likely to act always in a fully beneficial manner. Some people will sometimes inevitably, through wrong judgment or bad will, cause harm to themselves or to others, in a way that bears no rational relation and/or proportion to preceding deeds.

This "inevitability", note well, is a *statistical* fact, not implying determinism (otherwise, we could not logically refer to such events as acts of will). However, the intent here is not to reduce all events in human life to luck. It is only to deny that there can be automatic *universal* justice in our world, and to acknowledge that some injustice must occur, by virtue of the complexity of that world. It is not a statement that all is unjust, but only a statement that justice and injustice both occur.

And indeed, that is how we see the world in common sense, as a mixture of both. It is precisely for this reason that we have notions of both justice and injustice. Given this as an empirical fact, two questions arise.

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[333] The word freewill involves a redundancy. An action that is not free would not be referred to as 'will' – but as a mechanistic 'event'. Will is called free only to stress this obvious fact. Thus, will and freewill are synonyms.

The first question is: even if injustice *appears* to occur in the short run – might not justice be *restored later on in life or in an afterlife*? Such an assumption is a premise of many religions. In Hinduism and Buddhism, there is belief in a natural system of "karma" – through which every good or bad deed is *automatically* eventually (in this life or some later one(s)) compensated. In Judaism, Christianity and Islam, there is a similar faith in future reward or punishment, except that it is made *dependent on* the will of God, who may choose to mercifully withhold retribution.

In the latter case, God's behavior towards us is conceived as *dependent on our later behavior (regret, repentance, etc.), and on our prayers*. There is also, to a lesser extent, in all these religions, a doctrine that one person may sometimes take on the suffering of others and so lighten their load somewhat. In this context, it is considered useful in some religions to direct prayers to saints[334].

On a more secular plane, the awareness that justice is not automatic and some injustice is inevitable gives rise to private and public efforts at redress. Individuals sometimes reward a good deed or avenge a wrong by someone else. Societies usually establish elaborate justice systems, to ensure some of the injustices that do occur are compensated in some way.

Note well: if we believed that natural justice and/or Divine justice ensures appropriate retribution for all good and bad deeds, there would be no point in human acts of justice or a societal system of justice. On the contrary, such interference on our part could create confusion. It is precisely because we understand that justice is, at least in part, a human moral responsibility that we elect parliamentarians to enact laws, and appoint judges and a police force to implement these laws.

This leads us to the second question: *what to do about injustice?* From a spiritual development point of view, it is of course essential to demand a maximum of justice *from oneself* (towards self and others). One should also help others obtain justice, whenever and to the extent possible. But to expect constant and full justice, or worse still to demand it, *from others* (towards self) is not very wise; it is to condemn oneself to unnecessary conflict and suffering.

One should as much as possible disregard the misdeeds of others towards oneself, and move on. To get entangled in concerns like revenge is a waste of valuable time, a distraction from more important spiritual pursuits. One should realize the "samsaric" nature of this world we are in: it is so made that one cannot hope for 100% justice within it. So, it is best to accept things as they are, and take things in stride, as far as possible. One can train oneself to be "above it all" – and become relatively immune.

Of course, in some cases it would be wrong and even suicidal to accept injustice. For instance, it would not be wise (for others' sakes, if not one's own) to allow a murderous dictatorship to pursue its course. On the other hand, often our vexations are due to envy or excessive desire. For instance, one may get upset at not getting as much salary as one's colleagues at work. Follow the golden mean.

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[334] No one in Judaism prays to living or dead *people* (e.g. Moses or some Rebbe). Likewise (to my knowledge) in Islam (they do not pray to Mohammed). But prayers to saintly people and to people presumed to be gods incarnate are common in other religions: Christians pray to Jesus or Mary, Buddhists pray to Buddhas or bodhisattvas, and Hindus even pray to their flesh and blood gurus.

A word about the concept of “social justice” is appropriate here. This concept is based on the naturalist idea that all humans are born “equal”, and the context they are born into (genes, family, social milieu, wealth, etc.) is a matter of good or bad *luck*. This could be construed as a relatively materialist notion, which is less emphasized by people who believe in karma or in Divine management. But that does not belie it.

Often, it is true, people who demand social justice (meaning mainly economic equality) are simply envious and wish to obtain unearned benefits. On the other hand, it is true that “we are all in it (this world) together” and we can by judicious effort make it a world with maximum opportunity and minimum suffering for all. This is the real premise for social justice: it is ultimately good for everyone. Helping others does not impoverish the haves, but enriches them by improving the world surrounding them and inside themselves.

12. Forgiveness

It is not always easy to forgive those who have caused us some tangible or assumed harm. Yet, forgiveness of some sort seems in ordinary circumstances wise, if one wants to avoid wasteful entanglements. So, it is worthwhile reflecting on this topic. Forgiving means abstaining from demanding reparation for damage sustained; or again, refraining from seeking revenge.

Forgiveness varies in kind, with regard to the victim's attitude towards the offender:

- One does not punish someone one believes culpable.
- Or one 'understands' the culprit, considering him or her at some level or to some degree less guilty than he or she strictly appears to be.
- Or one is willing to relinquish judgment, going so far as to let the matter drop and forget it altogether.

Forgiveness may take different forms:

- *Conditional pardon*: this is not forgiving without first receiving at least a sincere apology, an acknowledgment of guilt and promise not to repeat the offense, so that one is not taken for a 'sucker' and 'screwed' again.
- *Unconditional pardon*: this is graceful forgiving, not dependent on a prior sign of repentance from the offender, considering that such grace may eventually cause his or her conscience to realize the harm done and the debt owed.
- *Pragmatic pardon*: disregarding the offense, moving on to other things. This may mean avoiding the offender thenceforth, or resuming interactions with him or her as if nothing happened. One may take such an attitude out of practical necessity; or so as not to remain blocked by hate, dropping the matter to be emotionally freed of it.

These are some aspects of forgiveness and common motives concerning it. Note that to forgive is not necessarily to forget. Even when one forgives, one may nevertheless vow not to forget, so as not to be victimized again. In such cases, one remains on guard against a proven danger, ready henceforth to defend oneself.

In this context, a reflection on the Christian statement "forgive them, for they know not what they do"[335] is in order. Such a motive for forgiveness may be considered self-contradictory,

[335] As I recall, this was uttered by Jesus against the Jews or the Romans involved in his crucifixion, somewhere in the Christian Bible. This dramatic event was sadly used for centuries as a pretext to bash "the" Jews in general. That is to say, the "forgive them" statement was paradoxically interpreted as a call *not to* forgive!

insofar as forgiveness presupposes some responsibility, which presupposes actions that were to some degree voluntary and conscious – if they were totally unconscious and involuntary, there is nothing to forgive, i.e. the concept of forgiveness is *not applicable*. One can still consistently say "don't be angry, for they know not what they do"; for one might well be angry at a natural phenomenon, and seek to calm one's anger, although one has no one to resent or forgive. Of course, it is also consistent to say: "forgive them, for they *hardly* know what they are doing", implying a bit of self-awareness – but one must consider to what extent "they" have chosen to be so unconscious. But in any case, one should not forgive by fooling oneself into doing so.

Forgiveness is usually the wisest course, because anger and hatred are attachments, i.e. weaknesses. One should not let one's enemy have this hold on one – i.e. weaken one and make one swerve away from serenity and nobility. It is bad enough that one has been wronged; it is preferable not to make matters worse for oneself by getting overly hung up on the episode. Let it pass, so far as possible. However, some crimes are unforgivable and it would be a crime to forgive them. Sometimes, one refuses to get involved in punishing guilt, out of laziness or selfishness. One then descends into advocacy of moral relativism or amorality, to justify one's inaction. No, one must conscientiously fulfill one's responsibilities, where applicable. Thus, be neither hotheaded nor indifferent, but find the right balance between mercy and justice.

Meditation both requires and produces forgiveness. One cannot advance far in meditation, if one is not willing to "let go" of unpleasant experiences. Also, the more one advances in meditation, the less are unpleasant experiences of any interest or importance. The mental influence of negative events diminishes, so that they appear less negative and so, when applicable, more easily forgiven.

General forgiveness. The Buddhists have a concept of "*metta*", which emphasizes universal love and compassion – even towards one's enemies, even towards people who have committed great crimes. This is of course a concept of total, immediate and unconditional forgiveness. The idea is that, through such magnanimous non-attachment to hatred and revenge, one becomes able to change people for the better and forge peace. It is argued that if one hangs on to resentment one only keeps the spiral of violence going.

I find it hard to subscribe to such a view, which in today's morally confused world is serving more and more as a justification for passivity to injustice. It is the sort of upside-down view that places Nazis and Nazi-hunters – or Palestinian terrorism and Israeli self-defense– on the same moral plane. The net result of this Buddhist idea is that victims are reproved for complaining or defending themselves, and their aggressors are tolerated and appeased no matter how heinous their crimes.

Permit me to doubt that such an attitude can lead to world peace, or social peace, or inner peace. It is, instead, a formula for suicide and utter anarchy; justice has to be enforced at some level, or injustice is bound to reign. By failing to resist crime, we weaken the innocent victims and make them more and more vulnerable, and we strengthen and encourage thugs. Justice must be swift and firm, to make clear to all potential criminals that there is no profit in their antisocial behavior, and thus to protect the innocent as much as possible.

As for the universal compassion enjoined by Buddhism, I wonder whether it is fair to describe it as a high-minded virtue. If we examine the motivation involved within the individual

practitioner, who in meditation trains himself to forgive and love his enemy, or anyone he perceives as evil, we see that: in the hope of gaining personal spiritual elevation or liberation, he is willing to be indifferent to the suffering of the victims of criminals, or even to reach-out in a friendly manner to criminals. This is best described as a selfish cop-out or sell-out.

However, if we avoid extremes, ‘metta’ is certainly commendable. An almost general loving-kindness can be cultivated by reflecting on the fact that we are all in this difficult world (samsara) together. We are all poor sods who landed here all of a sudden, not knowing from where and not knowing till where and when. This is our common lot. Some of us may seemingly have a luckier fate, but all of us experience some difficulty. One should not be too judging. Perhaps if I was born and raised in the place of this other person, I would have come out worse than him or her.

13. Actions and reactions.

The consequences of actions. All human actions have some sort of consequence; that is evident and not open to debate. However, discussions arise as to whether our actions always, necessarily have just consequences (for good or bad, as the case may be), or whether they may have unjust or non-just consequences (i.e. more or less than exactly what is deserved).

According to the "karma" theory of Buddhism (and indeed Hinduism), justice is ensured quite naturally. Actions automatically cause eventual symmetrical reactions, although the agent of the action (i.e. the doer of the deed) may have to reincarnate after death to receive the whiplash (i.e. for the "law of karma" to hold). But Buddhism has not clearly described this reincarnation process, nor provided convincing empirical evidence for it (some sort of demonstration of continuity between purported incarnations). Note that ultimately there is no mercy built into this conception, except perhaps for the mercy that individual humans[336] might choose to exercise.

In Judaism (and similar religions), justice is conditionally ensured by Divine intervention. God sees the misdeed and reacts to it as He wills, in strict justice or with mercy. This conception could either mean that God always takes complete charge of the connection (so that without Him human actions would have no necessary consequences), or more probably that He has instituted a natural action-reaction justice process that He may on occasion override with mercy. Here, then, the reactions to our actions are not (or not entirely) preprogrammed, but depend on ad hoc decision by God case by case. Obviously, such decisions involve some degree of willful choice by Him, else they would never mercifully derogate from justice.

In Judaism, as in Buddhism, the ethical account may be settled within the present life – or it may have to be dealt with in an afterlife. For it seems evident empirically that not all accounts are settled in the present life, else we would not have the impression that some evil people sometimes get away with evil and even enjoy more than they deserve and that some good people suffer unjustly or remain unrewarded for their good deeds. Both lines of thought, therefore, tend to agree on the existence of a 'heaven' and a 'hell' of some sort after the current life. These might be distinct places, or they might merely characterize specific conditions of rebirth within this same world.

Thirdly, of course, there is the philosophy of Naturalism, based on realistic assessment of empirically evident phenomena without assuming anything beyond them (i.e. a vague and unproved reincarnation, let alone Divine intervention). This hypothesis considers that good or bad deeds do sometimes impact on the universe and are absorbed by it, without respectively

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336 Or their more enlightened counterparts, i.e. Buddhas, bodhisattvas or *devas* ("gods").

benefiting or harming their doer. This view is also logically credible, although least satisfying to our native sense of right and wrong. It is (I presume) the view held by most people in the West today.

I cannot pretend to logically prescribe one of these views to the exclusion of the others. They are all theories, all to some extent based on facts and all involving proposals that inductively go beyond these facts. Who can say for sure which one is objectively correct? I can however, echoing Pascal's Wager, say that people who ignore the Judaic or Buddhist warning of eventual retribution if we do not do right and avoid wrong *may* conceivably eventually find themselves in dire straits. Comparatively, nothing much is risked by not opting for the Naturalistic thesis – the only 'loss' is not being able to do whatever one likes or not-do whatever one dislikes, i.e. a more limited range of possible action.

Based on this reasoning, it would seem wise to act *as if* justice exists (i.e. even though one cannot definitely prove it), and do good and avoid doing evil. Moreover, it would seem wise to hope and pray for God's mercy (again, even if there are no guarantees one will get it). One might otherwise, to repeat, eventually have some unpleasant surprises.

The concept of karma. The Buddhist (and likewise Hindu) concept of karma is inconsistent and imperfect in various respects.

For a start, it presupposes a world that has existed eternally, so that every event in one's life has a karmic precedent in previous lives in infinite regression. But this is contrary to modern ideas in astronomy and biology, according to which the material world has an undifferentiated beginning (quarks or earlier) and life has a start (on earth at least, some four billion years ago). The Buddhists may of course reply that such apparent beginning is a mere continuation of existences in previous material worlds or of previous purely spiritual existence(s).

Actions *do* indeed have consequences, but these are perhaps *not* always very 'just' (in all appearance). The hypothesis that actions always *ultimately* have just consequences involves an act of faith. It is an attempt to make the world more 'reasonable', an attempt that sometimes only produces painful disappointments and disillusions. We have to be honest and ready to accept that Nature is apparently sometimes just but *not* always so. This unpleasant observation might be mitigated through a karmic (or monotheistic) theory, but at the empirical level it is indubitable and best kept in mind.

Next, consider that logically there has to be a *first* crime (an aggression, or whatever), and an *innocent victim* of that first crime. For if we believe in *free will*, the crime is a gratuitous, *ex nihilo,* choice, and its victim is innocent. If we claim that the victim is on the receiving end because he (or she) did the same or a similar crime before (in this or in a previous lifetime) – we are effectively saying that he is *not* innocent, but *deserves* the victimization this time round. We should then congratulate the criminal, for committing an act of justice, punishing an evil person, closing the karmic circle (inevitably, according to the karmic premise). Thus, the karmic theory turns a victim into a criminal and the real criminal into an enforcer of justice!

Moreover, the real criminal cannot then be deserving of bad karma later on for his action (since it was de facto a 'just' act), whether he chose his action freely or was deterministically pushed to do it (by the force of universal karmic law). He is largely exculpated. At most, he

could be faulted for his inappropriate motive. In that case, the infinite cycle of karma is interrupted; i.e. there is no reason to expect him to be in turn a victim later on. This is the *inherent inconsistency* in the eternal karma viewpoint – it logically eliminates itself. The concepts of victim/criminal are *only* relevant in a freewill-doctrine context. The concepts are stolen in other contexts.

In my view, there *are* truly innocent victims of crime, first-time events of crime, and criminals truly guilty of crime. To *explain away* crime by karmic/deterministic views is to effectively accuse without any evidence (i.e. 'on principle') the victim of being an ex-criminal (and so deprive him of his dignity as a victim) and to praise the criminal for effectively doing justice. The proposed explanation produces confusion: it reverses the roles of the protagonists. It is an ideological viewpoint and a patently unfair one.

We may suppose that the karma theory was introduced as an explanation, to console people shocked by the injustice of physical aggressions, and other such events in the world. It obviously has some 'grain of truth' in it: there is indeed *some* 'karma', in the sense that some human actions apparently have *consequences that are satisfyingly just (*for good or bad) in our eyes. The problem is that *not all* human acts manifestly have such appropriate consequences; some seemingly have inappropriate consequences, either neutral or contrary to ethical expectations/demands. Thus, the theory cannot be inductively proved by generalization, only at best by adduction.

We may also object to the universality of karmic explanation by pointing out that not all suffering is due to victimization *by someone else*. This means that we cannot lay the blame on a *similar* crime by the sufferer, as it suggests. I am referring here to accidents and natural disasters (e.g. earthquakes, epidemics, famine and the like). Since in such cases there is (usually) no human action at *root* and indeed (again, usually) no human action could have prevented them, we cannot establish a *causal* connection and claim the untoward event happened *because* the victim deserved it (and even less that the victim can be inferred to have deserved it because the event happened!)

Karmic theory would have to claim equivalencies, i.e. work out some sort of conversion or exchange rates, between certain human acts and various accidents and natural disasters. Such intractable theoretical complications mean that karmic theory lacks technical precision (that is, it is not sufficiently fleshed-out, as required by epistemology) and is very hard to substantiate. Furthermore, we should not only look at *bad* natural events, but also at *good* ones – and how would we establish that someone Nature has well taken care of deserved it?

14. (Appendix 1) Round numbers in Torah statistics

List of numbers. The following concerns the near ubiquity of round numbers in Torah population statistics, not to mention other contexts. This is a possibly non-exhaustive listing, drawn from Exodus and Numbers.

The point of the present listing is to show that round numbers are the rule (with one exception) in enumerations of people in the Torah. That is to say, the numbers here listed (49 cases, including totals given in the text) usually end in hundreds of thousands (2 cases), thousands (5 cases), or hundreds (31 cases), or fifties (6 cases), or other tens (4 cases), and only one case in units.

This near ubiquity of round numbers is very surprising, not to say suspicious. It suggests the numbers are not empirical, but guesses or rough estimates or deliberately rounded figures or sheer fabrications. I have not to date found the question asked or an explanation offered in the commentaries. Such failure to notice or to comment is itself problematic.[337]

Rabbinical commentaries are also often in round numbers, but these are usually openly intended as approximations. However, in most the statistics here listed exact enumeration is apparently intended. Traditional commentaries so interpret them, and insist that this shows God is interested in each and every individual[338]. It is therefore difficult to suppose that Moses wrote down approximate numbers for some reason (unless we abandon such commentaries).

In Ex. 12:37 – parashah Bo:

"Men on foot, besides children".

about 600'000.

This is explicitly stated as a rough number: "about" (*ke*-). It is not stated how this number was arrived at.

A methodology is given in Ex. 30:11-15 for the subsequent, more precise censuses. Each individual to be numbered would donate half a shekel (or '*beka*'), then the total receipt would

[337] As we shall see further on (as I found out after writing most of this article and publishing it on the Web), the question has in fact been asked before, both by rabbis and academics, and various answers have been proposed, which I shall present and evaluate.

[338] See Rashi comment to Num. 1:1, further on. Also, e.g. *Hiddushei Harim*.

be multiplied by two.[339] This methodology is confirmed by actual practice in Ex. 38:25-26, where the total receipt in silver is specified.

It is not stated how long it took to carry out such a census. It could *conceivably* be done in a day or less, if well organized. Every man to be counted could hand his coin to the head of his small group (say, of one hundred men), then each of these heads could hand his collected coins to the head of a larger group (say, of one thousand men), who in turn would take the coins to the central collection point. There they would declare the total coins collected under their responsibility, and a grand total would be calculated. If this is indeed how the coins were collected, this total could be expected to be precisely correct.

In Ex. 32:28 – parashah Ki tissa:

"… fell of the people that day" at the hands of the Levites (after the golden calf episode):

about 3'000 Men.

This is explicitly stated as a rough number: "about" (*ki-*). Further on, it is written "and the L-rd smote the people, because they made the calf…" (Ex. 32:35), but no number is specified, and the commentators (e.g. Nachmanides) are not sure this meant more people were killed. Rashi on Ex. 31:18 implies that these events occurred on the 17th of Tammuz or soon thereafter.

In Ex. 38:26 – parashah Pekudei:

Men "from 20 years old and upward".

total 603'550.

The Torah gives us this total number without breakdown into tribes as in the book of Numbers, note; perhaps this suggests no tribal distinctions were made, only the total being sought out. Anyway, the total is confirmed within the text in the previous verse (v. 25), where it says "the silver of them that were numbered of the congregation" was 100 talents (*kikar*) and 1775 shekels (of the sanctuary).[340]

The commentator Rashi tells us contextually that 1 talent is equal to 3000 such shekels; thus, the amount of silver corresponded to 603'550 half-shekel contributors. This calculation, note well, strongly confirms the idea that the total number of men given here is intended as exact, since it is unthinkable that the amount of silver was not accurately reported. It is thus

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[339] Note that this method was applicable only to tribes other than Levi, since the latter was not subject to such monetary contributions and moreover even children in it were counted. See more on this further down.

[340] A question that comes to mind here is: where did all these half-shekel silver coins come from? Were they minted in Sinai before these censuses, or were they brought over from Egypt – and in the latter case, who minted them there and in what context? This question affects the credibility of the narrative somewhat. We could further ask whether coins at all existed at the time of the Exodus (traditionally, 2448 BCE). According to the findings of historians so far, Sumerians and Egyptians used silver and gold bars of set weight as money already in the fourth millennium BCE, and the shekel as a measure of weight existed in Mesopotamia already in about 3000 BCE – but the first stamped coins in the Mediterranean region date from about 650 BCE in Lydia, though there may have been earlier coinage in India or China.

understandable that Rashi offered no comment on the roundness of the number: he evidently regarded it as exact. This is the significance of his comment to Num. 1:1 (shown next), that this census was a demonstration of God's love for Israel – God wanted to show his interest in each and every Jew.

It is worth here quoting Rashi's comment to Num 1:1 in full –

> *Because they* [the Jews] *are precious before Him* [Hashem], *He counts them all the time. When they went out of Egypt He counted them* [Ex. 12:37]*; and when they fell because of the golden calf He counted them to know the number of those who remained* [Ex. 32:28]*; when He came to cause His Presence to rest upon them He counted them* [Ex. 38:26]*;. On the first day of Nissan the Mishkan was set up, and* [a month later] *on the first day of Iyar He counted them* [Num. 1:1].

Brackets mine. Note however that the actual number of survivors immediately after the sin of the golden calf is not given in Ex. 32. A *Sifte Hakhamim* comment explains this by pointing out Rashi's wording to have been "the number of those who remained", implying the number to be calculable (by subtracting about 3'000 at least from about 600'000) rather than known by enumeration.

In Num. 1:20-47 (confirmed 2:1-33) – parashah Bemidbar:

"Every male from 20 years old and upward, all that were able to go to war", "but the Levites… were not numbered among" them.

	46'500	Children of Reuven		
	59'300	Children of Simeon		
	45'650	Children of Gad	151'450	South
	74'600	Children of Judah		
	54'400	Children of Issachar		
	57'400	Children of Zebulun	186'400	East
	40'500	Children of Ephraim		
	32'200	Children of Manasseh		
	35'400	Children of Benjamin	108'100	West
	62'700	Children of Dan		
	41'500	Children of Asher		
	53'400	Children of Naphtali	157'600	North
total	603'550	Children of Israel except Levites.		

Note the exceptional ending in 50 for the Gadites, all other tribes ending in multiples of 100. This census occurred, on "the first day of the second month, in the second year after they were come out of the land of Egypt" (Num. 1:1). According to Ibn Ezra and Sforno, the purpose of the census was "to make arrangements for the encampments and the marching of the people"; they also specify that "these arrangements had to be completed by the twentieth of the same month, the day on which they left…" (*Soncino Chumash*, p. 793).

Notice the equality between the 603'550 total here, and that given in Ex. 38:26. This is surprising in that some time (over a month) seemingly elapsed between them. Rashi and other commentators noticed this, and claimed it meant that (miraculously) no one died in between.

However, as one perspicacious reader, Eddie Kerem-Sadeh, has pointed out to me, this explanation of the equality does not account for men who were under 20 years during the Ex. 38:26 census and then entered the 20+ age group in time for the first Numbers census. Moreover, he pointed out, the census surely did not happen instantaneously, but must have taken some time to carry out – and during such time more changes may have occurred in the statistics.

I wonder if Rashi and other commentators thought of this important objection, which makes the miracle claim logically inadequate, for though people might miraculously be kept alive, they cannot be prevented from getting older (i.e. time keeps passing). The best that could be said is that the number of those who died in the interim was equal to that of those who came of age during that time.[341]

Another and simpler explanation might be to regard these two censuses as one and the same. It could be argued that the Torah merely mentions the total number in Ex. 38, because it is there mainly concerned with detailing what was eventually done with the silver collected in the census; whereas in Num. 1, the Torah returns to this same census and so as to give us more statistical details. But this theory is not easy to defend.[342].

In Num. 3:14-39 – parashah Bemidbar:

Levites "from a month old and upward".

	7'500	Gershonites	
	8'600	Kohathites	
	6'200	Merarites	
total	22'300	Levites	by addition (not in text).

This total includes, according to commentaries:

	22'000	Levites	mentioned in text
plus	300	first-born Levites	inferred by commentators.

The motive for numbering the Levites was to replace the first-born of Israel (traditionally in charge of religious duties) with the Levites (Num. 3:11-13). The 300 first-born Levites

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341 If the age group counted was not literally 20+ but 20-59, as seems intended by the "able to go to war" specification, then we must take into consideration people who were under 60 (and so counted) in the first of these censuses and over 60 (and so not counted) in the second. The equation then is that the net sum of entries due to coming of age and of exits due to aging or death is zero. In that case, Rashi's scenario is conceivable – i.e. there may have been no deaths, provided the number who reached maturity (20) equaled to the number who became too old (60).

342 To uphold this speculation, the two enumerations must somehow be conflated. Ex. 38 concerns the preparations for erection of the sanctuary (*mishkan*), which presumably required the silver collected in the census; while Num. 1 concerns the preparations for departure from the wilderness, after the sanctuary was completed. Could it be that the actual erection of the sanctuary occurred after the census that started on or after the 1st of Iyar? If they indeed left that place within 20 days, as already mentioned, would they have had time take the census and then to erect and take down the sanctuary (and do all they did in between)? It seems difficult to uphold…

couldn't replace first-born Israelites, being themselves already subject to the duties of first-born. How the Levites were counted is not clarified in the text. According to Rashi (v. 16), the Levites (or at least their underage children) were not actually counted, but their numbers were revealed to Moses by God. These numbers are obviously intended as exact, since the total of 22'000 is thereafter used in a precise calculation (see next).

In Num. 3:40-43 – parashah Bemidbar:

"First-born males of the Children of Israel from one month old and upward" (excluding Levites).

22'273 first-born Israelites to be redeemed by 22'000 Levites.

Note this is *the only non-round number* so far listed.[343] Thus, 273 first-born Israelites could not be redeemed by Levites, but had to pay 5 shekels each (total Sh. 1'365), according to Num. 3:44-51.

The mismatch between the numbers of first-born Israelites and Levites to redeem them is significant, in that it makes improbable the hypothesis that God willed the round numbers for some purpose. Unless we assume He wanted some first-born not to be redeemable by Levites for some reason (perhaps just to make them pay 5 shekels each).

In Num. 4:1-49 – parashah Naso:

Levites 30-50 years old "that entered upon the service".

	2'750	Kohathites
	2'630	Gershonites
	3'200	Merarites
total	8'580	Levites.

It is not stated how these numbers were arrived at or whether they are meant as exact. This census of Levites was apparently (in view of the age group it concerns) motivated by the assignment of religious duties to the three family groups.

In Num. 11:21 – parashah Behaalotekha:

"Men on foot".

(about) 600'000.

It is reasonable to assume this is intended by Moses as a rough number, based on the last census.

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[343] Eliahu Beller, of Bar Ilan U., Math. Dept., has argued (in "The Problem of the First Born", *Higayon* No. 2 [1992]) that the numbers of first-born Israelites and Levites given in the Torah "seems astonishingly low" and on the basis of a mathematical model suggests that "the Torah counted only those first-born who were born in the year between the Exodus and the census", concluding that "the total number of first-born was many times higher". The questions to ask here are: (a) why does the Torah not specify this, but instead give the impression it is referring to complete enumerations of first-born, with precision; and (b) how come the Rabbis never raised this issue?

In Num. 16:2 – parashah Korach:

"Certain of the Children of Israel" who joined the rebellion.

250.

It is not stated how this number was arrived at or whether it is meant as exact.

In Num. 17:14 – parashah Korach:

"They that died by the plague" in this episode of rebellion.

14'700.

It is not stated how this number was arrived at or whether it is meant as exact.

In Num. 25:9 – parashah Balak:

"Those that died by the plague" in this lustful and idolatrous episode.

24'000.

It is not stated how this number was arrived at or whether it is meant as exact.

Note additionally that in a commentary on this episode by Rashi (specifically to Num. 25:5, quoting Sanhedrin 18a), it is stated that there were 78'000 judges each of whom killed 2 of his subjects, a total of 156'000 people.[344]

In Num. 26:1-53 – parashah Pinchas:

All "the Children of Israel, from 20 years old and upward… all that are able to go forth to war" except Levites.

43'730 Children of Reuven
22'200 Children of Simeon
40'500 Children of Gad
76'500 Children of Judah
64'300 Children of Issachar
60'500 Children of Zebulun
52'700 Children of Manasseh
32'500 Children of Ephraim
45'600 Children of Benjamin
64'400 Children of Dan
53'400 Children of Asher

[344] If we accept these figures as credible (personally, I hesitate to, considering that such a massive 20% population cull would have merited explicit mention in the Torah text) – we can infer the total adult male population at the time to have been 780'000 (if the judges of tens were included in their *minyans*) or perhaps 858'000 (if the judges were not included, which I am told is the case). This total, I guess (but do not know), would include all Israelite males aged over 13, since youths under 20 were also legally responsible.

	45’400	Children of Naphtali
total	601’730	Children of Israel except Levites.

Note the exceptional ending in 30 for the Reuvenites, all other tribes ending in multiples of 100. The text makes clear this is the new generation, about to enter the Promised Land, so it is not much use comparing this census to the earlier one. However, it is significant that the numbers are just as round here as there.

Note too that a comment by the Ramban (Nachmanides, mentioned in the *Soncino Chumash*, p. 940) states that the men numbered were between 20 and 60 years old. Although this is not (to my knowledge) specifically stated in this and the previous census(es), it is presumably applicable to them all, being apparently inferred from the specification that the men numbered were “able to go to war”. We could similarly suggest that the “able to go to war” specification would exclude men 20-59 years old with permanent physical or mental disabilities.

In Num. 26:62 – parashah Pinchas:

Levites, “every male a month old and upward”.

23’000.

Same comment as the preceding: not to compare past and present populations.

In Num. 31:40 – parashah Mattoth:

“Persons” (virgin women) taken captive in the war against Midian.

32’000.

This may be intended as an exact number, since the priestly “tribute” from half this number was exactly 32 persons. However, this 1/500th tribute (as well as the 1/50th levitical tribute from the other half) might be deemed only applicable to the nearest round numbers, up or down. Note in passing that the animals captured are also listed in round numbers.

Discussion. Now, the extremely low mathematical probabilities of the numerical coincidences noted here should be elucidated. The chances that a number end in 00 rather than in 01, 02, 03… or any other pair of last digits is simply 1 in 100; this is nothing special, since each ending has an equal chance. However, the chances that the 00 ending occurs in two separate statistics simultaneously are 1 in 100 times 100, i.e. 1/10’000. For three statistics, the chances are 1 in 100×100×100 or 100^3 (100 cubed or 10^6). And so forth. Thus, for a conjunction of eleven numbers ending in 00, as above, the chances are 1 in 100^{11} (100 to the 11th power or 10^{22}), clearly extremely slim. For this conjunction to be repeated in another set of eleven numbers, the chances are 100^{22} (10^{44}).

When I put this problem to a local rabbi, he argued that this was simply “a miracle, like the splitting of the sea” during the Exodus from Egypt. I replied that this was not a convincing argument to my mind, because whereas the splitting of the sea had an obvious purpose, viz. to allow the Children of Israel to pass through, the conjunction of so many round numbers is

inexplicable. Why would God bother making sure the numbers of Jews was round at the time of counting? Was it a love of symmetry, perhaps? To claim a miracle, one has to conceive of a reasonable purpose for it.

However, I later (during my next meditation) realized a purpose can indeed be proposed for these round numbers. Perhaps God performed this miracle *simply to signal His presence*, i.e. to tell us the numbers involved were *not fortuitous* but of His own making! That would constitute a worthwhile purpose. In this manner, the low probability of a peculiar conjunction of statistics can be turned from a source of skepticism to a source of added faith.

An objection might be raised to such proposed interpretation by pointing out that the number of Gadites ends in 50 in Num. 1:24 and that of Reuvenites ends in 30 in Num. 26:7. Similarly, the number of Kohathites ends in 50 in Num. 4:36 and that of Gershonites ends in 30 in Num. 4:40. Why such endings instead of 00 as in all other cases?

Skeptics would argue that these irregularities are a feeble attempt by the inventor of all the numbers to make them seem a bit more realistic. The attempt is feeble, because while more variation would have been credible, such rare exceptions are not too convincing.

Those who favor the theory that Moses wrote down numbers to the nearest hundred could explain the occurrence of a 50 ending, by saying such an exact number cannot reasonably be increased or decreased to the nearest 00, since it is precisely halfway between. But they could not similarly explain the occurrence of a 30 ending; besides, why precisely 30 twice?[345]

However, the proponents of the thesis that God is signaling His presence can reply that God inserted these slight irregularities in order to make room for skepticism. For, they would say, He desires us to believe in Him and His Torah through some measure of faith, rather than exclusively through proofs.

What is the logical upshot of all the above considerations?

- Looking at the highly improbable conjunction of numbers in certain passages of the Torah, one is inclined to a negative conclusion concerning them – i.e. to view the censuses they report as of very doubtful authenticity, if these are intended as exact. *If they are taken as approximations or rough estimates, their negative impact is of course thoroughly dissolved, note well.*

[345] Some interesting *possible* explanations of the round numbers have been suggested to me by the already mentioned reader, Eddie Kerem-Sadeh. One is that supposing the half-shekel coins were not counted but summed up by weighing large quantities of them together, and (as seems likely) the coins in use at the time were not all exactly equal in weight, the resulting total could only be approximate. Another is that the collecting and counting (or weighing) of coins must have taken considerable time, during which time there were age changes, as well as deaths; in that case, the numbers at the end of the process had perforce to be rounded, so as not to give a wrong impression that they were exact. Finally, he adds, if the results were audited, and found to vary somewhat, it would have been natural to record round number estimates, to express the margin of error involved. These seem to me excellent proposals on the whole. One objection I can think of is that, though from a secular point of view the coins might be deemed probably of unequal weight in view of technology then available, such coinage would be morally unacceptable according to Deut. 25:13. Moreover, if we look at Ex. 38:25-26, we see that the weight of silver and number of people inferred are precisely related.

- Moreover, if the stated passages of the Torah are put in doubt, then to some extent so is the Torah as a whole; at least in the sense that it cannot readily be claimed *entirely* true. And to the extent that we base our faith in God's existence on the Torah, as many people do, such faith is in turn somewhat shaken – even if logically belief in God is quite possible without belief in the Torah.
- However, these skeptical conclusions remain *inductive*, because the opposing view is able to muster an alternative hypothesis in its defense. That is to say, the improbable set of exact numbers may *conceivably* be explained as an intentional creation of God to indicate His presence to the faithful. The mere fact that a counter-argument is possible suffices to ensure that a skeptical conclusion is *not deductively necessary*.
- But of course the skeptical conclusion remains inductively very strong. That an alternative hypothesis is remotely possible does not make belief in it necessary. It just provides a logical escape route, however farfetched. It leaves a little room for continued faith in the Torah, and thence God, even if mathematics suggests improbability. Such belief is very improbable, but not quite impossible.

This overall conclusion is in accord with our general thesis that belief in God can neither be proved nor disproved. In this instance, it is not directly belief in God that is at stake, anyway, but the Torah or just a part thereof. We have above shown that the latter, although weakened considerably by certain numerical improbabilities in it, cannot be decisively discredited by them.

Now, let us examine certain implications of the above figures of 600'000 plus males in more detail. We know that the first set of 603'550 males 20 or more years old all (except for Joshua and Caleb) died in the 40 or so years until the second count of 601'730. Thus, the latter set consists of males who were 0-19 years old at the time of the earlier census, plus males born in the first 20 years of the intervening period. Males born in the second tranche of 20 years or so of the intervening period being under 20 years old are not included in the latter number.

At the time of the earlier census, there was no doubt some males over 60 years old who not being fit for war were not included in the figure of 603'550. But at the time of the later census, there were no males over 60 years old (with the said two exceptions), since all the earlier generation over 20 years old died off. (Presumably, the female Israelites over 20 years old of the earlier generation died off too.) Therefore, the count of 601'730 is actually the number of all adult males, and we do not have to consider how many might be over 60 years old.

If we wish to estimate the total population that was poised to inherit the Promised Land, we must thus consider only three tranches of males: 0-19, 20-39 and 40-59. We know the latter two age groups add up to 601'730. If we assume (as a first guess, in view of the equality between the latter total and the earlier) these three tranches to be about equal, we can estimate the total male Israelite population at that time at 900'000. If we assume there were an equal number of females, the total Israelite population would have been 1'800'000.

These figures all exclude Levites. We know there were 23'000 males of all age groups (over one month old). This figure may include many over 60 years old, since the older generations of Levites did not all die off (as implied by Rashi's comment to Num. 1:49). If we assume here again an equal number of females, the total Levite population would be 46'000. This

presumably includes the priests (*kohanim*). Add this to the Israelite total, and we get **a grand total of 1'850'000 or so** (in round numbers).

This calculation explains the traditional figure of 2-3 million. The two million figure is a reasonable minimum – given the Torah numbers – and the higher three million figure is based on somewhat larger reproductive assumptions. Some people have suggested even larger figures, in the 4-5 million range, but this seems wildly exaggerated to me. I am not a demographer, but it seems to me the above assumptions are more reasonable.

As already mentioned, the figures given in the Torah can be doubted on simple grounds of mathematical improbability that so many round numbers would occur together. But[346] modern *historians* have come up with much more serious cause for doubt – namely the fact that a population of the magnitude proposed (two million or more) was far too large for the time and place concerned. They estimate Egyptian population at that time was of the same order of magnitude[347], and Canaanite population (including all ethnic groups) was probably far less[348] (though the Hittites and Amorites, it is now known, were spread out well beyond Canaan).

I personally tend to believe them. I would if necessary accept arbitrarily dividing all the figures in Numbers by ten, say, on the ground that accounts given in ancient times were often hyperbolic[349]. The reason I am so willing to compromise on the numbers is that *logically this makes little difference to the essence of the story of the Exodus*. I still believe there was a mass exodus of slaves from Egypt, who then proceeded to conquer and settle Canaan[350]. The reason I believe this is that I ask the question: why would a people invent the story that it had been enslaved abroad and that it escaped and conquered its land from other peoples? There would be no sense in inventing such a disadvantageous story.

That such a people existed there and then is phenomenologically indubitable. They are mentioned throughout subsequent history by many people and have left many archeological and existential traces. This people still exists today (and I know for a fact my family has been part of it from way back). Some of the historians who bring up the said numerical doubts have a hidden religious or political agenda. Their goal is either to debunk religion or to de-

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346 The following reflections on population were stimulated in me by the feedback of another reader, who asked not to be named.

347 This in itself proves nothing, since in a slave economy the slaves may eventually outnumber the freemen. I recently read, for example, that at one point in time the black and white populations of the U.S. South were about equal.

348 At most 100'000, according to one article (see http://en.wikipedia.org/wiki/The_Exodus and the references given there). The Egyptian army is there estimated as 20'000 at the most. These figures are significant, since the Torah claims the Hebrews could muster some 600'000 men of fighting age (though it does not say where their weapons would come from). The implications being that though it is conceivable that these men (just escaped from slavery) could be afraid of the Egyptian host, it is less credible that they would fear a Canaanite population of far inferior size.

349 However, the division by 100 proposed by Prof. Avraham Malamat of Hebrew U. (according to the aforementioned Wikipedia article) seems an exaggeration in the opposite direction. Considering my comment in the previous footnote, the figure of 60'000 fighting men would be more credible – in proportion to the Egyptian and Canaanite forces they faced.

350 Or more precisely, *re*conquer and *re*settle the land, since their ancestors Abraham, Isaac and Jacob had already lived there until some 400 years earlier, according to the Torah (less, according to commentators). There is no reason to think this people might have originated in Egypt, or elsewhere than (as they claimed) in Canaan. They were ethnically clearly Semites and not Hamites.

legitimatize the presence of Jews in the Holy Land today. They do not speak as historians, but as anti-Judaic, anti-Jewish, anti-Israeli, anti-Zionist or 'post-Zionist' advocates.

But the point I wish to make here is that arguing that the numbers given in the Torah are incredibly high does not prove their point. It does not imply that there was no exodus and no ancient Jewish presence on the land. They cannot logically infer from the doubtfulness of some historical or scientific claims in the Torah that all such claims in the Torah are false. That would be an invalid generalization, since certainly many of the claims made in the Torah have turned out to be true. It is important to remain lucid and impartial in this matter as in all others.

Postscript. After writing most of the above article, I received from Israel a copy of an article written (in Hebrew) by Prof. Ely Merzbach of Bar Ilan University years ago on the same topic: "The Census of Israeli Tribes in the Torah" (*Higayon*, vol. 5 [2000]). It is clear from that article that Prof. Merzbach noticed the issues here raised long before me, and moreover that *so did some notable rabbinical commentators* which he mentions. I shall first consider the latter.[351]

- The first mentioned is R. Moshe Sofer (1762-1839), known as the Chatam Sofer. In his work *Torat Moshe*, he notes that the census numbers end in 10, 50, 100 or 1000, and explains the fact somewhat by pointing out that these multiples correspond to groupings of people under the responsibility of the judges. He also points out that the Rosh (another important commentator) considers approximation common in the Torah (as for example 49 days of the counting of the omer are called 50 days).

  Thus, though this commentator seems to imply and accept that the census figures are approximate, he does not apparently go more deeply into the issues such admission raise.

- Next mentioned is R. Meir Simha HaCohen (1843-1926). He explicitly admits that numbers were rounded ("*assu mispar hakolel*") and suggests such approximations were made downwards, towards the lesser round number. He explains all this with reference to military musters (as indeed is justified in view of the repeated mention of "men able to go to war"). This reason was not applicable to Levites (who were not actually counted[352]) or to the first-born (who were counted precisely).

  However, it appears this commentator too did not take stock of the difficulty posed by a couple of numbers ending exceptionally in 50 or 30 instead of 00.

- Thirdly mentioned is R. Aharon David Goldberg (presumably a more recent commentator), who (in his *Shirat David*) rightly expresses amazement ("*ze davar pele*") that units are not included in the censuses. He tells us of a book called *Shaarei Aharon* that mentions another book called *Imrei Noam*, in which census numbers are said to be rounded upwards, to the next greater 100 (note disagreement with preceding view). But he apparently favors the theory that the numbers were rounded to the nearest 100, whether up

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351 Please note that in view of the poverty of my knowledge of Hebrew, my interpretation of this article (albeit with the help of a more knowledgeable friend) may not be fully accurate. However, I did send Prof. Merzbach copy of my comments by e-mail, asking him to correct me if I misread him, and he replied to me that my reading was "*grosso modo*" accurate.

352 As mentioned earlier, in the name of Rashi.

or down. In the case of the tribe of Gad, whose total ends in 50, the number must have ended exactly in 50, so could not be rounded either way. The numbers of Levites were rounded to the nearest 10, because Levite figures were relatively low (in the thousands, rather than tens of thousands).

However, this commentator does not seemingly notice or explain the fact that the number of Reuvenites ends in 30. Moreover, he does not realize that the number of Levites (given in Num. 3) must be taken as exact, to justify the calculations made with it regarding the first-born.

- A fourth commentator, R. Yaakov Kamenetsky (1891-1986), does attempt to address the problem posed by the number of Reuvenites. He considers that in all matters military numbers end in 100 or in 50, thus explaining all other Israelite census numbers. He suggests that if after all such groupings say 45 men were left – they would be counted as another "50", by putting 49 men in five groups of (almost) "50". This could explain the number of Gadites ending in 50. For the number of Reuvenites ending in 30, however, he offers *a very unsatisfactory solution*. According to him, the number was deliberately not rounded to the nearest 50, so as to signal that the rebels Dathan and Abiram came from this tribe.

  This solution seems patently absurd to me, considering that the Korach rebellion episode referred to occurred *after* the census concerned. This would imply that the Torah was first written with a number ending in 100 or 50 for the Reuvenites, and then was modified ex post facto to stigmatize this tribe. Moreover, why *only* this tribe? There were 250 rebels (not to mention 14'700 sympathizers), and even if most came from the tribe of Reuven, many came from other tribes. How does this commentator know how many came from each tribe and their respective degrees of responsibility? It is not specified anywhere. Clearly, the proposed explanation is not at all convincing.

Thus, to conclude this overview, contrary to what I initially assumed (and was told by some Torah scholars I queried), some relatively recent rabbis did notice and comment upon the fact of the round numbers. However, some of these commentators did not realize the full extent of the problems it raises, and moreover the solutions they did propose were not sufficient to solve all these problems.

It is worth mentioning, additionally, that these commentators, who all admit of approximation, are de facto at loggerheads with Rashi and other earlier commentators, who effectively take the figures in question as exact, as the Torah (as we have shown in some instances above) seems to imply them to be. Noteworthy, too, is the fact that these commentators considerably disagree with each other as to how approximation occurred.[353]

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[353] One reflection that comes to my mind after reading these commentaries is that the groupings of men, whether in 10s, 50s, 100s or 1000s, for whatever purpose, could not have been as easy in practice as it looks on paper. Such groups *must have been in constant flux*, as men died or became ineligible due to aging or other disabilities, or became newly eligible for inclusion. When a place became vacant in a group, it could not necessarily be instantly refilled; and conversely, when a youth became old enough for inclusion, he might not immediately find a spare place. Moreover, the people in a group would have to live in the same vicinity of the camp, for practical reasons; so groups would not interchange populations at will across the whole nation or even the tribe. All this suggests that groups would not at any given time necessarily have their defining number of members.

Prof. Merzbach seems to reach the same general conclusion, viz. that these four commentators did not succeed in actually solving the enigma(s) at hand, and goes on to propose some possible solutions of his own.

To my mind, his most important and relevant insight is that ***the tribal totals might be approximations that cancel each other out, so that the national total may be taken as an exact number***. This idea is brilliant, because it allows for a reconciliation between the apparent exactitude of the 603'550 figure in Ex. 38:26 (since it corresponds to the silver collected) and thence of the same figure in Num. 1:46 (granting Rashi's claim), and the need to admit that the improbable round numbers for the various tribes were approximate.

Prof. Merzbach points out that, assuming each number was rounded to the nearest hundred up or down, the most that each tribal total would differ from reality would be 49, and the most that the national total would differ from reality would be twelve times that, i.e. only 588. But, he adds, it would be very unlikely that the deviation would be uniformly so large – and not inconceivable that it would happen to be nil due to rounding up and down of numbers of various magnitudes.

In the first census in Numbers, the total for the tribe of Gad ends in 50. This, as already explained, would be explicable as an exact number, which being midway could not be rounded up or down. Thus, here, only eleven rounding of numbers would have to cancel each other out, to yield an exact grand total.

However, what of the total for the tribe of Reuven in the second census in Numbers, which ends in 30? He suggests that this too may have been an exact number, arguing that in a list of ten (or even, in our case, twelve) numbers it would not be improbable for one of the numbers to end in 0. He then supposes that this number (ending in 30) was not rounded to the nearest hundred below, because it seemed round enough as it was. He points out that the practice of rounding is historically a relatively recent mathematical artifice, dating perhaps from the Middle Ages.

While it is conceivable that the people who made that census reasoned as here suggested, it is not of course very logical. They should either have rounded all tribal totals to the nearest 10 or to the nearest 100. If, as the commentators earlier mentioned suggested, they chose to round numbers to the nearest 100 for military purposes, there would have been no reason for them to make an exception in the one case ending in 30. Of course, people sometimes do weird things, but this argument is not very convincing.

Unless! Unless we suppose that they consciously ended that tribal total in such exceptional manner, to make sure that the national total of 601'730, which they knew to be an exact number, could be calculated from the tribal totals. All the other numbers were rounded, and their approximations canceled each other out, but this number could not be rounded in the same way (i.e. to the nearest 100) without distorting the grand total, so it was kept with a 30 ending. It was thus quite intentional and not illogical.

Upon further reflection, it would be acceptable to suppose that the number ending in 30 was itself rounded to the nearest ten, provided what was added or subtracted from it was balanced by some other number(s) in the list (we could in that case accept R. Kamenetsky's explanation of the choice of the Reuvenite number rather than another tribe's for that purpose). Also, similar reasoning can be applied to the previous census, if necessary; i.e. we can imagine the

number ending in 50 (for the Gadites) to have likewise been rounded so as to arrive at the required exact grand total, if the need ever arise.[354]

Thus, Prof. Merzbach's analysis together with past commentaries provide us with some conceivable and reasonably credible solutions to the problems involved for the Israelite numbers[355]. His thesis restores the consistency of the Torah passages concerned with mathematical principles of probability, and so makes the Torah claim to literal truth in this matter more credible. This of course does not prove the factuality (i.e. historicity) of its numerical claims, but it at least removes some of the possible sources of doubt.

[354] Note lastly that Prof. Merzbach suggests additionally that the subtotals given for the four "standards" (*degalim*) under which the tribes were grouped in threes (under Reuven, Judah, Ephraim and Dan – see Num. 2:1-33) can, with the same hypothesis, be explained as exact numbers that sum up approximations. For, he argues, why else would the Torah spell out subtotals that any reader could easily calculate? He thus reinforces his thesis by making it more useful still. However, in my view this additional hypothesis has disadvantages that far outweigh its advantage. First, because it considerably limits the scope for approximation in the individual tribal numbers, since now every three grouped under the same banner have to add up to an exact number. And second, because it restores the issue of exponential improbability, since it claims the subtotals (like the grand total) to be exact numbers, albeit round (one ending in 50 and three in 00). Since this subsidiary thesis is inessential to the main thesis, I would eschew it.

[355] Note however that some difficulties remain with regard to the numbers of Levites. Namely how come the numbers for their three families given in Num. 3:14-39 all end in 00, even though no military motive can be adduced (the total must also be considered exact, since as earlier stated, it is used in calculations relating to the first-born); and similarly why the numbers given in Num. 4:1-49 all end in 0 (and coincidentally one ends in 50 and one in 30 – those same numbers again!), though in the latter case, groupings by tens would be explicable with reference to work teams.

15. (Appendix 2) Prayer in uncertainty

The Rabbis have decreed that we should not utter a prayer for or against an event (or the negation of an event), if the latter is already a settled matter. This principle is logical enough – there is no point praying for something, if that thing has already happened or failed to happen. It is, as it were, a waste of God's time– a mark of disrespect. For God does not undo facts that have occurred; he does not change the past ex post facto. What's done is done and cannot be undone. Facts are facts. Prayer can only be concerned with facts that are not yet ontologically determined.

> Most people are, of course, aware of this, and would not bother praying for something that cannot conceivably be changed. We often wish things were not as they already are, but we do not (if we are sane of mind) expect their reality to be overturned after the fact. We can still (quite rationally) pray that the bad future consequences of some past or present event be mitigated or annulled – assuming that this is within the realm of the possible, i.e. that the anticipated bad consequences are not tied to the unfortunate event by necessity.

Moreover, the Rabbis argue that in cases of uncertainty, where the fact may be in reality settled, but we cannot be sure of it one way or the other, we should not formulate prayers for or against it. An example given is: suppose you see smoke rising in the distance, in the direction of your home, you may not pray "May this fire not be in my house" – for if your house happens to be the one burning, it would be a prayer in vain (*levatala*). In my view, this second principle is not entirely reasonable.

It refers to an event that is epistemologically undetermined or undeterminable, note well[356]. Just because the event *might be* ontologically settled, we are required to behave as if it *is indeed* settled. This sounds like an impractical principle to me, because:

(a) In most circumstances, we do not really know whether the event in question is materially settled or not; human knowledge is inductive and open to error, so we can rarely if ever be absolutely sure of anything, as this principle demands. This implies most prayer to be vain, by the said rabbinical standards. So, most prayers would be forbidden.

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[356] We might here distinguish between four conditions of uncertainty: natural spontaneity (as in quantum mechanics); indeterminism due to volitional intervention (e.g. unpredictable human choices); uncertainty as to the applicable law of nature, though natural law is assumable; chance coincidence within natural determinism (e.g. lottery events). The first two cases imply real indeterminism, whereas the last two are issues of ignorance (the third relates to not knowing a generality, while the fourth relates to not knowing how known generalities are expressed in a particular case).

(b) In urgent situations (like in the example given above), we do not have time to ponder and decide whether we are uncertain enough to be allowed to pray or not. We just pray, and hope and wish. This spontaneous and heartfelt prayer is surely welcome and not faulted by God. He well knows the limits of our cognitive faculties.

(c) Many people are not sufficiently developed philosophically to be able to make the fine distinctions required by the proposed rabbinical principle. It is too intellectual and complicated, and so effectively blocks ordinary prayer.

But not wishing to be accused of often opposing the judgment of the Rabbis, I would propose the following simple solution to the problem they pose. Uncertainties inhibit prayer insofar as the latter is expressed categorically. Therefore, when praying for or against some event, just make your prayer implicitly if not explicitly **conditional** – saying or thinking: *if the matter is not yet settled, dear God, please make it so and so*. It would surely not offend God to thus formulate a prayer conditionally.

The following correspondence (dating back to mid-2007) provides an illustration of the issue here treated, and deals incidentally with a few other interesting issues.

To: irp@medethics.org.il – Shalom:

Recently, during a lecture I attended at the Geneva *Chabad* center, the main rabbi mentioned a Talmudic ruling that it is permitted to pray for a son during the first 40 days of pregnancy but not thereafter.

I objected that the Talmudic Rabbis were mistaken, according to modern science, because it is now known that **the sex of a child is genetically determined at conception**. If the sex chromosomes in the first cell are XX the baby will be female, and if they are XY the baby will be male. This is the genetics of the first cell, which is reproduced thereafter in all cells.

The Rabbis could not know this, since genes were not discovered till the 19th Century, and fully understood till the 20th Century. There is no shame in ignorance or error, but of course to suppose that the Rabbis are not omniscient or infallible is contrary to Jewish dogma and very subversive.

Note that there is no "40 days" involved – nor less than 40 days, nor more than 40 days. If the Rabbis mentioned 40 days, it is possibly due to their observations of voluntary or involuntary abortions; they must have noticed that prior to about 40 days, the embryo is not morphologically sexually differentiated, whereas after that period (actually, many days later) sexual characters visible to the naked eye begin to appear.

A young rabbi wrote this objection to you, and asked you for a rebuttal. You replied that the Rabbis had in mind the problem of "testicular feminization". According to your reply, this allows for the possibility of a male fetus that *would have* abnormally taken on female characteristics to return to a normal male development in the first 40 days, thanks to ardent prayer.

However, this answer is logically absurd on several counts.

First, it is *scientifically* unsound, in that the underlying problem here is not merely hormonal, but due to **a genetic disorder**, and this is **inevitably operative since the first day** (here again

there is no justification for mention of 40 days, note). More on the scientific issues further down.

But secondly, it is *dialectically* inadequate, for if the Rabbis did not know about genetics, **they could not know** about a discrepancy between an embryo's or fetus' genotype (XY genetic makeup) and its phenotype (a female sex organ). To them, the fetus' gender was simply identical with the physically visible character. **They had no way to identify** the genetic sexuality of a fetus or born child by medical tests.

If now you try to tell me that the Rabbis did know, by some sort of prophetic vision, about testicular feminization and about the genetic sexual status of actual individuals, I ask you to tell me where they mention it explicitly (do not confuse this issue with that of hermaphrodites, though – they knew about this disorder because it is visible to the naked eye).

Clearly, if they had known about testicular feminization, they would have discussed this **halakhically extremely important question** in detail. By the way, the incidence of this disease is estimated at about 1 in 20,000 (according to some; others say much less); it is rare, but enough to be significant.

Is the child with such a disease (effectively, a malformation) to be regarded as a boy or a girl? If we go by the genetic makeup, it is a boy, and therefore he should be forbidden to have sex with or marry other boys (to avoid homosexuality) and he should do his bar mitzvah, etc. If we go by the physical appearance (sex organ), it is a girl, even though she cannot reproduce, and she is exempt from male mitzvas.

In view of the **dangerous ambiguities** involved, they would doubtless have dealt with these important issues directly (not just with reference to hermaphrodites, to repeat). To my knowledge, *they never did*, which proves that they did not know about testicular feminization.

Your reply was thus **not a valid answer to the question posed**. I suspect your reply was only intended as a smoke screen or manipulation; i.e. you pretended to reply, hoping your word would naively not be questioned further.

So much for the dialectics. Now to return to the scientific, factual issues. If you type "testicular feminization" in your Google search bar, you will find many sites that tell you about it. I recommend you to study at least the following page:

http://en.wikipedia.org/wiki/Androgen_insensitivity_syndrome#4._Infertile_male_syndrome

This page contains an instructive diagram of the genetic disorder. As you can see, a mutant gene (hereditary from the mother's side) causes normal androgen hormone reception to be blocked. As a result, male sexual characteristics are inhibited from developing normally. This mutant gene is found supposedly in all cells of the organism, since all cells contain the X chromosome where this gene is imbedded.

Much more is involved. But my conclusion is simply that no amount of prayer in the first 40 days (or less, or more) can change that condition, since it is genetic and therefore pervasive from conception onwards. One can suppose that genetic medicine will one day prevent this disease perhaps by some genetic manipulation *in vitro* on the first cell – but once the embryo/fetus/baby is allowed to develop, there is nothing to be done about it.

Do correct me if you think me wrong; I have an open mind.

Moreover, note, I wonder why you only mentioned testicular feminization. There are other "intersex" syndromes. Notably, a female genotype may develop as a male phenotype. So if people pray that their genetically male child does not turn out looking like a female, they should also pray that their genetically female child does not turn out looking like a male. For in either case, serious halakhic complications ensue.

Nowadays, *it seems to me*, genetic males who develop abnormally as apparent females ought to undergo masculinization therapy or sex change towards male features. Similarly, female genotypes with male phenotype might legitimately be treated or operated on (femininization). This would be a practical solution to the halakhic difficulties. But I am no expert or authority, of course.

With regard to the issue of 40 days, if you type "fetal development" in your Google search bar, you can learn a lot about that subject. See for instance:

http://en.wikipedia.org/wiki/Fetal_development

According to my reading of these sources, sexual characteristics begin to be visible well after 40 days – some seem to suggest after the 8^{th}, 9^{th} or even 10^{th} week of prenatal development. In that case, where did the Rabbis get the 40 days (6 weeks) figure, I wonder? Do tell me if you know.

Note in passing that I have nothing against prayer. The issue about prayer only arises because of the Rabbinic principle that you should not pray in the case of a known *fait accompli*. But the truth is, we could always pray in the way of a *conditional* statement rather than a categorical one. Instead of saying "please give me a boy" just say "*if the matter is not settled*, please give me a boy". In that case there is no danger of a prayer in vain.

The truth is, people always pray when they *do not personally know* whether the facts of the matter are settled or not. If they know the case is closed, they won't bother praying anyway. Prayer surely cannot be characterized as "in vain" when one does not know it is in vain; otherwise, one would almost never pray, fearing to pray in vain. So this aspect of the discussion seems to me much ado about nothing – just *pilpul*.

I await your pertinent and credible replies to all the above objections.

With best regards, A. S.

The **reply received** from medethics.org.il (without a signature identifying the particular writer) was:

> "It seems to me that some of translation difficulties are at the root of our misunderstanding (as my original Responsa on the subject were in Hebrew). I shall therefore start with some clarifications:
>
> 1. I have no qualms to withdraw when I make a mistake. As a human being that is not so rare.
>
> 2. In my responsum, I never stated that the rabbis knew modern genetics, fifteen hundred years ago. I only wrote that the Babylonian Talmudic rule may be in accordance with some genetic phenomena known today, such as Testicular Feminization or Swyer syndrome.

3. In my last responsum to your young Rabbi I asked for a reference to show that the defect discussed exhibits a full or at least very high penetrance. 'Penetrance is a term used in genetics that describes the extent to which the properties controlled by a gene, its phenotype, will be expressed.' This is the definition given in wikipedia – not the fully reliable source needed, but enough for this correspondence. Later on the article asserts that:

'However, relatively few of the genes in the genome show high penetrance. Most genes make their little contribution to a very complex milieu of biological interactions, to which many other genes are also contributing. As a result, most genes and their effects and mechanisms of action are very difficult to fully understand, because the required observations and experiments are complex and difficult to devise. Even if such observations and experiments were conducted, however, some theorists would still hold that because all traits are influenced by non-genetic factors as well as by genetic factors, no trait can be determined strictly by genes.'

4. Therefore, if you can supply a confirmed evidence that both syndromes (Testicular Feminization or Swyer syndrome) are determined solely genetically with no environmental component, I shall have to withdraw my suggested statement, and I shall do it without any hesitation. Otherwise, there is merit for prayer before some unknown environmental component may cause a significant effect, and my early reply is a valid one, as a different conclusion has no scientific backup.

5. According to Halachah, the sex of a newborn is determined by its phenotype. So with both syndromes, the baby is considered fully female in Halachic terms.

6. If you are interested in the Halachic considerations employed in dealing with severe ambiguous genitalia, please see Prof. Steinberg's Encyclopedia of Jewish Medical Ethics (English version- Feldheim Publishers, 2003), Vol I, pp. 50-54.

I would be glad to hear from you again on this and other subjects."

To which **I in turn replied** the following:

Concerning your point 1.

> *"1**.** I have no qualms to withdraw when I make a mistake. As a human being that is not so rare."*

When I mentioned unwillingness to admit mistakes – I was thinking of the Rabbis in general, not you personally.

Once a decision is handed down, it is never admitted in error, even if the assumed knowledge of nature on which it was based turns out to be incorrect. Our discussion here is a case in point. I know it is useless to argue, because they never change their minds. They simply cannot dare do so, because that would be a loss of authority. I guess you are probably in the same situation – to admit rabbinical error would in your view (I disagree) constitute a denial of Judaism.

Concerning your point 2.

> *"2**.** In my responsum I never stated that the rabbis knew modern genetics, fifteen hundred years ago. I only wrote that the Babylonian Talmudic rule may be in*

> *accordance with some genetic phenomena known today, such as Testicular Feminization or Swyer syndrome."*

This statement shows me that *you missed the main point in my previous letter*.

My point was that you commit **the logical fallacy of anachronism** when you try to justify *past* rabbinical statements by referring to *present* scientific knowledge which they lacked. The Talmud Rabbis did not know *about* genetic differences between males and females, and moreover had no physical means *to test* for such differences, even if they had guessed such differences might exist.

It follows logically that, just as they could not tell boys from girls by reference to anything other than phenotype, they could not know about or diagnose the diseases you mention, which depend for their identification on detecting a discrepancy between genotype and phenotype. It follows from this remark that it is irrelevant what the prognosis might be for such a disease (curable or incurable, and at what stage if curable), this is a discussion completely outside their purview.

Therefore, you logically cannot justify their statement ex post facto with reference to such genetic diseases. *You* might yourself today or tomorrow be justified to make a similar statement (about praying for a boy, etc) on the basis of modern medical knowledge – but it remains true and inescapable that the statement *they* made was in fact unjustified, i.e. based on (retrospectively viewed) wrong scientific assumptions.

This was the main point of my argument, which you evidently missed.

With regard to your point 3.

> *"3. In my last responsum to your young Rabbi I asked for a reference to show that the defect discussed exhibits a full or at least very high penetrance."*

Here, your thinking is fallacious in that **you confuse two modes (or types) of modality**.

You argue in effect that a cure might exist and eventually be found – and on that basis you feel justified in maintaining that prayer for a boy is justified. Moreover, you challenge me to prove that the disease in question is forever *in*curable. You are in effect saying, as far as we know, this disease *might* turn out to be curable, therefore I can readily assume it *can* be cured.

But a "might be" does not logically imply a "can be" – these are different modes of modality (one relates to context of knowledge, the other the established natural possibilities). You confuse that which is in principle *conceivable or imaginable* before the fact, and that which is already known and established to be *a potential within the nature* of the specific entities concerned.

Moreover, it is contrary to scientific method, i.e. inductive logic, to say: if I can imagine a hypothesis, the onus of proof is on you to prove me the opposite. NO – the responsibility is on the one conceiving *an empirically not-yet confirmed hypothesis* (viz. that this disease is curable) to provide empirical proof of his idea.

For example, no one can say "there's life beyond the planet earth" simply on the basis of rational speculation; scientists have to bring concrete proof to this hypothesis before it is accepted as science.

Your fourth remark is therefore a wrong posture.

> *"4. Therefore, if you can supply a confirmed evidence that both syndromes (Testicular Feminization or Swyer syndrome) are determined solely genetically with no environmental component, I shall have to withdraw my suggested statement, and I shall do it without any hesitation."*

You could justifiably say that you reasonably expect or have faith that one day soon we will in fact discover a cure to the disease (i.e. inject an environmental component, a medicine, e.g. some hormones or other substance that would override the inhibition of normal development caused by the faulty gene), provided you admit this as scientifically speculative at this stage.

In my view (stated in my previous letter), you could indeed on this speculative basis (a "might be") pray to G-d for a boy. Any personal uncertainty allows for prayer, whatever the facts of the case.

But, I hasten to add, you **cannot consistently** do so *in the rabbinical view*! Why, you ask? For the simple reason, that as far as *present* (though perhaps not *future*) scientific theoretical knowledge and practical skill are concerned, there's absolutely no way (no "can be") to cure that disease.

This being the case, to pray for a cure would be a prayer in vain (*levatala*), and you are thus contradicting another rabbinical principle in your attempt to thus buttress the one about baby's sex. Do you understand this reasoning? It leaves you without a logical out – check mate.

Finally, concerning your point 5.

> *"5. According to Halachah, the sex of a newborn is determined by its phenotype."*

This I knew already, though to tell you the truth I had not known of these shocking genetic diseases till you mentioned them to us (so I learned something valuable from it all). But the whole point of my above critique is that this posture of the halakha is wrong – i.e. it is based on an erroneous knowledge context.

The Rabbis' position in favor of phenotype was reasonable in their day and age, when there was no knowledge of genotype and of genetic diseases like those you mention. Today, the scientific/factual context is very different – and to ignore that difference is logically untenable. It is blind dogma, divorced from reality.

My point is that the Rabbis today *must* reconsider the issue in the light of new knowledge. Why must? Because if they do not, they allow ambiguities to subsist with regard to homosexual relations – i.e. **they allow another, more important Torah law to be ignored**.

Viewed objectively, testicular feminization is an abnormal development. The baby is in fact (genetically) a male but because of some genetic mutation it fails to develop as such (phenotype). It is as if a baby grows with an arm missing: it is not regarded as an armless new type of human being, but as an ordinary human being who developed abnormally due to some defect.

Considering that there is a incidence of 1 in 20'000 with this disease in the population at large, and considering that masculinization is nowadays medically possible, this is certainly an issue that should be dealt with urgently by the Rabbis of today, no matter what the Rabbis of yesteryear thought about it.

If a man marries a female phenotype with male genotype – is this homosexuality or not? Should not people with the wrong phenotype immediately "change sex", i.e. correct their phenotype? Such people are certainly in a sad situation. It seems to me that this is a burning issue for modern medical ethics to consider.

As for your point 6:

> *"6. If you are interested in the Halachic considerations employed in dealing with severe ambiguous genitalia, please see Prof. Steinberg's Encyclopedia of Jewish Medical Ethics (English version – Feldheim Publishers, 2003), Vol I, pp. 50-54*."

I do not here have access to this book. But if you send me an article on the subject I might look at it to inform myself. Please note that I cannot devote more time to this discussion, unless you have some radically new thing to say.

You don't have to write back, in other words. But if you do, please inform me as to your name and qualifications. You speak of "Responsa" – are you a Rabbi? Also, do you have any medical education and training? With thanks and best regards, A. S.

16. Addenda (2009)

1. Concerning chapter 2. To my mind, whenever I read the Bible, the greatest **obstacles** to easy belief are the obscurity and confusion in many parts of the text. This puts the Divine origin of the text as a whole in doubt, although parts of it may well still have Divine origin. Even if the latter supposition is true, it is difficult to ascertain which parts are indeed to be trusted. Nevertheless, as already argued by me in some specific cases, it is often obvious enough which parts are *not* of such exalted origin, though their human source may well be exceptionally wise and spiritually high.

Such reflections are not new. One of the oldest Bible critics is Chiwi al-Balkhi (9th Cent., Bactria)[357]. Some of his assumed criticisms are described by Solomon Schechter, as follows[358]:

> *…to give some summary of the nature of our author's arguments. As it would seem his Scripture difficulties were suggested by the following considerations: (1) That the style of the Scriptures is lacking in clearness, being constantly in need of explanation, which is not always forthcoming. (2) That they are wanting in consistency of phraseology and diction. (3) That they contain needless details and repetitions. These are of course more or less mere linguistic or philological difficulties; but the medieval Jews apparently considered such obscurities and inconsistencies in the diction and in the spelling as incompatible with the divine nature of a book, which is expected to be clear, concise, and free from ambiguities. Of a more serious nature are the considerations: (4) That they are full of chronological difficulties. (5) That the various books constituting the Scriptures are either directly contradictory to each other or ignore laws and ceremonies in the one portion which are considered as of the greatest import in the other. (6) That their ethics are inferior and in no way compatible with the moral nature of God.*

While I would not necessarily endorse all of the man's criticisms (he is said to have written some two hundred), and I am aware that the Rabbis (notably Saadia Gaon) have proposed credible answers to some of them, I think it is fair to say that many of them are very pertinent even today. He was a modern reader, centuries early.

Of course, people may ask me, and I ask myself: why be so negative? Why seek to find fault with every little thing? What is the utility and purpose of so much criticality? The only answer I can give is: love of truth. Truth is capable of withstanding all tests. If a belief can't take the

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357 See: http://en.wikipedia.org/wiki/Chivi_al_Blakhi.

358 "*The oldest collection of bible difficulties, by a Jew*" (1901), The Jewish Quarterly Review **XIII**: 345–374.

prodding, it may not be true. One has to have the courage to face reality, and not let oneself be deflected from it by hopes and fears. The important thing is to ask the questions with respect and love, and to make the effort not to be more destructive than the answers allow.

2. Concerning chapter 3. I mention the frequent appeal to *miracles* for the purposes of explanation as characteristic of **Rashi**. Another or subsidiary characteristic of his is appeal to *prophecy* and frequent indulgence in *anachronism*. The latter two are related to each other as well as to the former. Note that I am not denying miracle or prophecy (they are explicitly mentioned in many stories of the Tanakh), but merely marking Rashi's tendency to appeal to them even when it is not necessary (i.e. when a more naturalistic explanation is conceivable). I am, of course, aware that Rashi draws heavily on Talmudic and Midrashic accounts, but the fact remains that he draws on explanations with such miraculous tendencies *more than* other commentators (like the Ramban, say) do[359].

Samples of Rashi's commentary. To buttress his idea that the fathers and mothers of the Jewish people knew and practiced the whole Torah, and so were anachronistically already Jews before the Gift of Torah at Sinai, he must attribute to them knowledge of the laws by prophetic powers (e.g. Rashi to Gen 26:5). Similarly, Rachel's burial at Bethlehem, instead of Hebron, is explained as necessary in anticipation of the Babylonian exile (a millennium later), so that the matriarch could pray for the captives en route (Rashi to Gen. 48:7). Or again, to explain whence the Israelites had the wood necessary for the desert Sanctuary, Rashi claims that Yaacov had cedar trees planted in Egypt over two hundred years earlier for just this purpose, which the Israelites cut them down and prepared for transportation prior to the exodus (Rashi to Ex. 26:15).

Philosophically, Rashi's implied worldview – the ubiquity of miracles, the routine interference of Providence in human affairs – is conceivable; religiously, it is commendable, showing great faith and consciousness of God's presence. But in a more rationalist perspective, it is too easy, an explanatory shortcut and copout; it is not as demanding and credible as a detailed naturalistic analysis.

Concerning **apologetics**, I would like to add that part of their motive is no doubt the belief that one pleases God by arguing, however tenuously, in His apparent favor or in favor of the religion. But surely, from a rational point of view, a 100% respect for truth is more appreciated by God. We should frankly admit areas of doubt or difficulty; we may deal with them as well as we can, but always with honesty, never in a manipulating manner.

3. Concerning chapter 4. I there mention **vegetarianism** as a possible alternative to the traditional kosher diet. I should have said that I am personally a vegetarian, though I have in the past not been one. I abstained from saying it so as not to seem to be peddling a particular opinion. But upon reflection, I should have argued the point. I gave up meat many years ago, essentially out of pity for the animals subjected to industrial methods of production, transportation and slaughter[360]. A couple of years ago I also stopped eating fish, having read

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359 For him it is *lehatchila* (opening assumption), for them it is *bedieved* (the last resort).

360 Check out various texts and videos starting at http://www.peta.org/

that mankind is truly destroying the world's fish stocks, both directly and indirectly[361]. I still, however, eat dairy products.

I do not buy the traditional argument that "we should not try to be more merciful than God asks us to be in the Torah". Even if the Torah permits eating of meat and fish, we must take into consideration that this refers to small populations using small-scale farming and slaughter. The animal then had some dignity. This is no longer true today, when it is treated as a mere thing, when meat and fish are by most people purchased off the supermarket stall without any awareness or respect for its living source. Even eggs and cheese are tainted in this regard, though a little less so. Therefore, yes, I do recommend vegetarianism.

Speaking of slaughter, let us also mention **animal sacrifices** in the Temple. I agree with the Rambam's (Maimonides') assessment that these were vestiges of the past. This is partly suggested in the Torah itself (Lev. 17:7). It is all the more obvious today, when we know the history of mankind so much more fully and can well see how widespread the practice of sacrifice has been. I cannot imagine why God would have any interest in such practices; I cannot either see how it could possibly be of any benefit to the human beings engaged in them. Even if they believe the sacrificed animal's suffering and death replaces their own, there is no conceivable way this might objectively occur. The conceivable (illusory) psychological relief hardly justifies such violent behavior. The objective "karmic" effect is likely to be more guilt rather than less.

But let us suppose, as the Ramban (Nachmanides) for his part assumes, that God has chosen to create a mystical (invisible, underlying) connection between man and God justifying animal sacrifice. This is a conceivable hypothesis if we imagine a few sacrifices a year performed in the name of the whole nation. But when we start computing all the obligatory and voluntary sacrifices that according to the Torah would have to be performed per annum for all the individuals in the nation, as well as for the nation as a whole, not to mention for foreigners, we have to admit perplexity. This means hundreds of thousands or even millions of animals killed every year, year after year[362]. Blood would flow constantly, *ad nauseam*. So much suffering – for what?

I do hope and pray for the restoration of the Temple on its ancient site, soon in our days. But I personally do not look forward to such daily massacres of poor, innocent beasts. Considered in abstraction, in small quantities, the practice seems innocuous, almost natural. But when actual numbers are brought to mind, it is clearly inhumane and unacceptable. I cannot see any spirituality in it – quite the contrary, it is bound to reduce our sensitivity, kindness and goodness. Animals do not deserve such harsh treatment, and human beings are better off without this outdated 'mitzva'. It is difficult to believe God would actually have ever demanded this of us. More likely, an existing priestly caste justified it ex post facto as Divinely commanded.

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[361] See for instance http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf and http://www.greenfacts.org/en/fisheries/#3

[362] Just think: 100 a day equals 36,500 a year; 1000 a day equals 365,000 a year. How many sacrifices would a nation of several million bring per annum? Once numbers are considered the whole proposition becomes much more doubtful.

4. I mention in chapter 6 and in appendix 1 that there are 'difficult questions' concerning the Torah narrative that the Rabbis have not sufficiently asked and not successfully answered. One such question or set of questions is the following.

What did the Israelites **eat and drink** during their desert wanderings (and indeed what did their animals eat and drink)? This eating question is partially answered by assuming that during the month that elapsed until they got the gift of manna, they may have carried food (and fodder), and that after the manna ceased they supposedly bought what they need from the people(s) living in their vicinity. There is no mention of what the animals (required for sacrificial purposes) ate during the years of manna. As for drink, while at times the narrative mentions specific natural and miraculous water sources (presumably used for animals as well as humans), at other times the issue is not clarified. Consequently, the oral tradition refers to 'Myriam's well' – a sort of miraculously mobile well – having accompanied them for most of their journey.

At first glance, the given explanations seem convincing even if incomplete, but upon reflection, when *the quantities involved* are considered they seem rather incredible. For, granting Torah population figures, we are here talking about some two million people (i.e. Israelite men, women and children, not to mention the 'mixed multitude' accompanying them), and a large herd of animals (presumably hundreds of thousands of them). This means over *four times* the current Jewish population of Jerusalem. Imagine the quantities of food and drink such a large number of people need daily! Then add on the needs of the animals for good measure. Then multiply this figure by 365 per year and again by 40 for the years of wandering.

If we assume just half a liter of water per human per day, that would be 1'000'000 liters or 1'000 tonnes of water per day. Over 365 days, this means 365'000 tonnes of water. And over 40 years, the quantity would be 14.6 million tonnes. Similarly, for periods when the manna was not yet or no longer granted, if we assume (for the sake of argument) a food ration of only a quarter kilo per person on average, they would have needed 500 tonnes per day, and so on. Similarly for animals, only more so – though their types and numbers are unknown, so it is no use making any calculations.[363][364]

Now, *consider the logistics* needed to supply a population of that size. Not only are the quantities enormous, but the question is how were these quantities distributed? Did two million people daily come to a central spot (like Myriam's well) with their recipients and collect their portions, or were these brought to them on animals or on carts? How was the water drawn out from eventual wells, considering the quantities involved? They had no pumps or canals; someone had to do the work using tools of some sort. Compare life in a modern city, to get an idea of the magnitude of the task.

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[363] Rashi suggests the matza they carried with them on the day they left Egypt was miraculously replenished. He does not clarify just how this occurred – did a matza grow back when a piece of it was broken off, or did a matza reappear in the pile after it was eaten? The thing is to try to visualize the alleged miracle more clearly, rather than to deny it outright. If such miracle did occur for a month, why did the manna seem so miraculous? And why was manna necessary instead of the matza? (To the latter question, one Rabbi answered me credibly by saying that perhaps the manna was the food spiritually needed to receive Torah.)

[364] The Torah text does mention *some* grazing to have occurred, since it warns against allowing cattle to graze at the foot of Mount Sinai during the giving of the Torah. But there is no indication that the desert was capable of sustaining a large animal population for 40 years entirely by grazing, and it does not seem reasonable to suppose it.

In some commentaries, the people are presented as carrying with them the food and drink needed for an extended period of time (e.g. from the departure from Egypt till the manna started appearing). But when we thus calculate the quantities involved, it seems absurd to propose this. Each adult would have to be a superman to carry so much. Animals might transport a large part of the human burden, but then what of the burden of the animals' fodder and water?

Similarly, some commentaries refer to purchase of food, fodder and drink from surrounding populations. This explanation seems relevant if we imagine a small group of nomads – but when we take into consideration a market of two million people, it becomes very difficult to conceive. The surrounding populations would have to be assumed themselves very large to have cultivated or drawn, and brought for sale, such massive quantities of food, fodder and water.

Even if the region was more fertile than it is today, large areas would have had to be cultivated, and a one year advance notice of the need for such large scale agriculture would have been called for or the peasants would have had to be prescient. Large water sources (a lake, a flowing river, gushing wells or intense rains) would have been required to produce the food and fodder, as well as to quench the thirst of the producers, the consumers and their animals. So this relatively naturalistic explanation is not very credible.

Even the collection of manna raises questions of logistics. Assuming that it was not deposited at their doorstep, but they had to range out beyond the camp to collect it, imagine hundreds of thousands of manna collectors going out every day of the week to pick up their families' portions. How long did the trip there and back take? Traffic would have had to be organized, to avoid jams. Add to this work the drawing and transportation of water, and you can see that many people were kept busy.

All this means that there is ample room for doubt in both the Torah narrative and Rabbinic attempts to make it more credible. We must assume that the Exodus population was much smaller than the written text claims – or we must suppose that there were many more miracles than those explicitly mentioned in it. For instance, perhaps Myriam's moving well was a gushing jet that poured water to every family's tent. Maybe people miraculously needed very little water (for drink and other purposes), and maybe animals none at all. And so on.

A more skeptical commentator would suggest that the written story is largely exaggerated, and its very human writer(s) did not take the time to make it quite consistent and convincing. If one reads it inattentively it may sound feasible – but if one asks some difficult questions it seems less conceivable.

5. Concerning the import of **meditation** to Judaism (chapter 7). The psychological value of meditation is that it increases one's control over one's thoughts, words and actions. By clarifying one's mental field enormously, one is able to pinpoint problems precisely and resolve them in a micro-surgical manner.

How meditation works can be understood through the following metaphor. Imagine you are standing in waters in which you have dropped a precious stone. If the water is too troubled, you cannot see through it to the seabed and so cannot retrieve your jewel. You cannot calm and clear the waters by mechanical interference. You must just be patient and let them settle

naturally. Then, when they do, you can easily see and pick up the jewel. Similarly, meditation allows your mental activity to calm down, after which you can more readily intuit your soul and perhaps better make contact with God.

Moreover, when you see your soul more clearly, you can better control it, because you do not confuse it with the mental phenomena that surround it. Regular meditation facilitates resolving past problems and avoiding future problems. It permits one to deal with problems in the present tense, in a more precise manner. When one is less mentally confused and in the dark, one is more logical in one's attitudes and less hesitant in one's actions. It is better not to sin at all than to sin and have to regret and repent thereafter. Prevention is better than cure. This is simple logic or economy.

On a more 'metaphysical' level, meditation consists in preparing oneself to return to one's spiritual Source. Our soul is a tiny spark of the grand Soul which is God. Sent in this material world to help redeem it, our soul is momentarily cut-off from its Source and weighed down by materiality. Through meditation, we can recover our original spiritual purity, calm and emptiness – we can thus ready our soul to merge seamlessly again with God. Just as He is free of the burdens of substantiality and entanglement, so do we try to become. Just as He is peaceful and transparent, so do we strive to be. When death comes, we can thus hope our soul to more easily recover its natural place in Him.

(Two more addenda on the following pages.)

17. Logic in defense of Zionism (2009)

The media nowadays are overwhelmingly biased against Zionism and Israel. This posture has lately become more than a mere fashion – it is now the "spirit of the times", a popular "axiom" that it is forbidden to even question. As an acquaintance remarked to me during the recent Gaza war – it is really an emotional burden for us Jews to have to bear this massive negative vibration emanating from so many of our fellow human beings at once. Indeed, never before in history have so few been blindly hated by so many. In the past, such hatred was concentrated on some communities more than others – but nowadays, due to media hype, the orchestration of anti-Semitism has taken literally world-wide proportions.

There are many aspects to this issue, of course. My purpose here is to remark on some of the *logical* aspects of it. I wish to bring to your attention some of the *inconsistencies and empirical failures* in the argumentum of the opponents of Zionism.

Zionism is neither imperialism nor colonialism. A standard argument of anti-Israelis is that the Jews *stole* the land now called Israel. It is important to debunk this claim because it is alleged by leftist opponents of Israel to be *the cause* of their opposition to it. It is on this basis that they pose as indignant defenders of justice and morality. They claim the Arabs, or "Palestinians", were there before the Jews, natives living peacefully, minding their own business, when they were invaded by foreign imperialists (i.e. the Jews) who displaced them and colonized their land. This argument is not only historically false, but logically absurd.

If the Jews had gone to Uganda (as was proposed to them at the beginning of the 20th Century), they could have been labeled invaders and settlers, for they had no historical connection to that land. But when the Jews came to the land then called Palestine, they were returning home, to the land of their direct ancestors. Their situation at the time was analogous to that of exiled Tibetans today. If these Tibetans wish to reclaim their country, now or hundreds of years from now, who would dare deny them their moral right and legal title to the whole land or assert that people who took their place in the meantime have a valid claim to any part of it?

Historically, it is well known since antiquity that the Jews (or Israelites or Hebrews) have inhabited the land of Israel since 1300 BCE (counting as of the Exodus from Egypt) or since 1700 BCE (counting from the Patriarch Abraham's immigration from Mesopotamia). These are traditional Biblical dates (some anti-Zionist historians dispute them, but even if some 500 years are subtracted, our arguments will hold, so this issue does not matter here).

When the Jews arrived, there were other peoples there, who have all since disappeared from history – either killed in wars or exiled abroad (as many Jews were) by Egyptians, Assyrians, Babylonians, Persians, etc. The peoples who were present were in any case not "home grown", but themselves immigrants or parts of peoples spread further afield. Thus, the Philistines (a non-Semitic people) probably came from the Greek islands, the Hittites (also non-Semites) came from Anatolia, the Amorites (Semites, like Abraham) came from Mesopotamia, the Canaanites were Hamites according to the Bible or Semites from Arabia according to some historians[365], and so forth. All these disappeared by the time of the First Exile, i.e. the 6th Century BCE.

This country being at the crossroads of three continents has always been a melting pot of different peoples. Humanity, remember, has always been in motion, ever since the first men emigrated from East Africa. None of the peoples who antedated the Jewish presence, note well, were the progenitors of present-day "Palestinian" Arabs. The latter arrived much later: some conceivably came in the wake of the 7th Century CE invasion of the land of Israel by Arab hordes recently converted to Islam; but many came much more recently, in the 19th and 20th Centuries (at the same time as Jews were returning from Europe and surrounding Arab countries).

Reading current 'Palestinian' narratives, one might suppose that these Arabs were created *in situ*. But this is of course a story lately concocted for propaganda purposes by pseudo-historians. European and Jewish travelers to the Holy Land in the 19th Century all testified to the depopulation and desolation of the land.

So to the question: who was here first and who came after? – the answer is indisputably: the Jews came before the Arabs, a couple of thousand years before. Moreover, it is significant that the Jews have inhabited that land much longer than the Arabs have. If any people is indigenous to that land, then, it is undoubtedly the Jewish people. Furthermore, the fact on the ground that the Jews are now in control of the land is significant. These three factors – who came first, who was there the longest and who is now sovereign – determine the superiority of the claim to the land (the whole land) by the Jews in any rational and fair assessment.

Prior to the Arab arrival, the Jewish nation lost its sovereignty to the Greeks, then the Romans (who renamed the country as Palestine in an effort to conceal its Jewish ownership). Many Jews were exiled after the destruction of the Second Temple in 70 CE, but many stayed on (as attested, for instance, by the redaction of the Jerusalem Talmud in the 4th Century). Dominion passed on to the Byzantine successors of Rome and (briefly) to Persian conquerors, until the Moslem Arabs came as conquerors and settlers in the 7th Century, as already indicated.

If any group in the region can be accused of imperialism and colonialism it is demonstrably the Arabs, who left their native peninsula to spread by the force of arms from India to Spain in a matter of decades. They still today occupy most of these stolen lands – from Iraq to Morocco. It is therefore ironic that these very people accuse Jews of those particular crimes. They claim that Israel (or more moderately, parts of it) is "occupied Arab land" and complain of "settlements" in it – but forget or conceal that not just Israel but *all* the land outside of Arabia proper that they stand on today is land the Arabs stole from other peoples!

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[365] Note that the Hamitic and Semitic languages are very close, and linguistic indices play an important role in the historians' theories of origins of peoples.

This is, of course, a *logical* mistake in their argumentum. There is however another, more subtle, inconsistency that I wish to bring to your attention. Anti-Israelis answer the above historical arguments by saying: "well, but this is all ancient history – the fact is that in the mid-20th Century, the Jews displaced the Palestinians [i.e. Arabs] and took over their lands." Why is this inconsistent? I will now explain.

If we accept that ancient Jewish history is irrelevant and what counts is who was in fact inhabiting most of the land some decades before the Israeli War of Independence – then we could equally well argue that recent Arab history is irrelevant and what counts is who is in fact inhabiting most of the land *today*. If the fait accompli of the Arab takeover of the land of Israel in the 7th Century (and later by other conquerors, most recently the Moslem Ottoman Turks[366]) is morally acceptable, why is the fait accompli of the Jewish takeover in the 20th Century morally unacceptable? Who decides how many years of de facto possession constitutes legal ownership? By what universal standards?

Clearly, those who deny Israel its right to exist use *an arbitrary double standard*, which cuts history up in ways convenient to Arab claims. If might is effectively right in the case of the Arabs, then it is logically also right in the case of the Jews. If we are going to be Machiavellian about it, we must be so all the way. So long as the Jews are able to maintain their independence from Arab hegemonic ambitions by the force of arms, they have full right to the land. If they are fool enough to let themselves be weakened by the psychological war their enemies wage against them, and they give up their possessions, no one will defend their rights.

But in any case, I do not advocate that might is right. Jews have a much better and more lasting claim to the land of Israel. This is *the land of their ancestors*, which they have in part at least inhabited *for about three and a half thousand years*. The fact that other peoples (including the Arabs) invaded that land since their arrival, and often killed or chased many of them off does not diminish the Jewish claim, because there were demonstrably (through plentiful documentary and archeological evidence) some Jews in the land throughout this historical period, and because Jews have survived history and continued to claim that land. This argument has force irrespective of one's religious convictions (or lack of them), note well.

As for the "Palestinians" – i.e. the Moslem Arabs living in "Palestine" – it should be added that they were never a distinct people, with a distinct history and culture, until some smart propagandists invented them a few decades ago. They always existed as undifferentiated Arabs, scattered throughout the Middle East since the Arab invasion of it. The land they lived on was always part of or possessed by a larger political entity. There was never an Arab nation or sovereignty specifically on Palestinian soil. The last effective sovereign before Israel was the British Mandate, and before that was the Ottoman Empire. So the Arabs have no national claim to the land.

There would be no Arab-Israeli conflict if the Arabs had done the right thing from the start and left the land to its rightful owners, the Jews. The surrounding Arab countries ought to invite their brethren back home – if necessary, all the way back to their original Arabian homeland

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366 Less than 500 years ago. These Ottoman Turks, note, were not native to the region, but descendents of invaders of the Middle East originating from the central Asian steppes, related to the Mongols.

(now oil-rich and quite able to sustain them). Nearly a million Jews were expelled or escaped from the Arab countries in the years surrounding the creation of the State of Israel[367]; and most of these refugees (and millions more from other countries) were lovingly absorbed by that country. There is no reason why the Arabs should not likewise show hospitality to their kin, for the sake of lasting peace.

No good can emerge from perpetuating the problem of conflicting claims to the same land. The "two state solution" currently proposed is a road map to hell. Only tension, hatred, war and suffering can come from it. It is designed to so narrow and weaken the Jewish State as to ensure its eventual destruction. Everyone knows this is the secretly desired outcome of that "peace plan" – it promises the peace of the (Jewish) grave. Israel cannot rationally be expected to commit suicide. Those who sincerely want peace should advocate, facilitate and help finance the obvious solution of an international program encouraging voluntary emigration of Arabs.

Anti-Zionism is anti-Semitism. Because, for the moment, anti-Zionists vehemently deny that they are anti-Semites, it is important to demonstrate their equivalence. The simplest way to do so is to examine whether the passions aroused in anti-Israelis by events in Israel are proportional or disproportional, in comparison with the passions aroused in them by events elsewhere. This is an appeal to the logic of causation, the branch of formal logic that tells us how to identify causes and effects. If a person reacts differently to similar circumstances, we naturally ask why; if we discern a pattern of behavior such that when Jews are involved the reaction is one way and when they are not involved it is another way, we may fairly infer that the observed difference in behavior is *due to* this differentiating factor.

The question is: are the current opponents of Israel simply 'pro-Palestinian' or 'humanitarian' (as they claim) – or are they prejudicially anti-Israeli? If Israel was not Jewish (but the creation of some other ethnic group) would reactions to it be the same? The empirical facts are the following. When Palestinians are subject to similar or worse sufferings due to the actions of other Arabs or Moslems (for example, when thousands of them were killed in Jordan in September 1970[368]), the public outcry is much smaller or non-existent. When similar or worse sufferings happen to Jews by the hand of Palestinians (women and children deliberately killed by terrorists) or to other peoples elsewhere (for example, the Darfur minority in the Sudan), again the public outcry is noticeably less or almost nil. The reactions to Israel are evidently out of all proportion, compared to usual reactions.

Such observable discrepancies clearly and irrefutably prove that anti-Israeli sentiments are rooted in anti-Semitism and nothing else, for a majority Jewish population is the distinguishing mark of the Jewish State. The importance of this argument cannot be exaggerated: the evidence at hand proves the true cause. However much anti-Israelis protest their objectivity and even-handedness, their actions speak louder than their words: their basic motive is manifestly anti-Jewish racism and their reactions are manifestly based on double-standards.

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367 See http://www.justiceforjews.com/narrative.html.

368 Or more recently (in 2007), during the bombardment of a 'Palestinian' refugee camp by Lebanese forces trying to destroy a terrorist group there.

They protest that "it is surely possible to criticize the Israeli government's behavior without being an anti-Semite" – but the question they do not answer, note well, is: how come that criticism is so much more virulent than the criticism towards other countries or peoples for comparable behavior? Criticism is legitimate – but unfair criticism, criticism using double standards, is not legitimate. If all humans are equal in their hearts, then their indignation, anger and hatred should be commensurate with actual events. For instance, if a couple of thousand Palestinians die in anti-terrorist operations, while 400,000 Darfur people die in ethnic cleansing operations – the emotions aroused by the latter events should objectively be at least 200 times more intense than in the former. Yet the opposite occurs. This proves double standards are involved.

Some anti-Semites moronically claim they are not anti-Semitic, since they are Jewish or Arab and therefore themselves Semitic! This is just word-play. The word 'anti-Semite' originally (19th Cent.) meant anti-Jewish – if now some sophists wish to change its meaning to include hatred of all Semites (so as to dilute its significance), then we could simply have to start using the word 'anti-Jewish' instead. And of course, there is no denying that some Jews are anti-Jewish (we call these 'self-hating' Jews).

In conclusion, it is very important for people to get acquainted with the full and real history of the land of Israel, which clearly and unequivocally declares the Jews' just and full entitlement to it. The media succeed in their misrepresentation of the Jews' rights first of all by falsifying history. When, to give one example, the Moslem authorities (the *Waqf*) currently in charge of the Temple Mount in Jerusalem shamelessly claim that there was never a Jewish Temple on the mount, or even a Jewish kingdom in Israel, and mainstream TV or newspapers report such statements without comment, implying acquiescence, history is being deliberately falsified for political ends. It is no wonder then that the man in the street believes the canard that Israel is "occupied Palestinian/Arab land" and consequently feels hostility against Israelis/Jews.

Moreover, the pseudo-reasoning that leads such people into anti-Israeli views has to be challenged. Double standards are clearly involved, as above shown. This is not entirely due to dishonesty – in some cases, the fake arguments are difficult to unravel and expose. Even so, there is obviously a great deal of dishonesty out there. There is a perverse will to mislead public opinion; most of the journalists, professors and politicians involved are not innocent bystanders, but active enemies of Israel. As other commentators have already pointed out, they adhere to a new secular religion – one in which the nation of Israel ("*le juif des nations*") plays a central role as the bad guy, towards which negative passions are deliberately channeled.

The absolute necessity of Israel. We are indeed witnessing "lynch-mobbing" on an unprecedented international scale – totally unfair and unrelenting criticism of Israel, without concern for the destructive consequences, indeed relishing them. This is objectively not just anti-Israeli propaganda; its ultimate aim has got to be the destruction of the Jewish people as a whole. Eretz Israel houses almost half the world Jewish population, and has the sympathy and support of the vast majority of Diaspora Jewry. As Arab propaganda makes clear[369], the Arabs

[369] See for instance the websites www.pmw.org and www.memri.org which give many examples – like the following video from Egyptian TV: http://www.youtube.com /watch?v=koGCMT9Pevs.

make little distinction between the groups. When they speak of Israelis, they call them simply *al-yahud* – the Jews. They openly and explicitly dream of Jewish genocide[370].

If anything proves the need for Jews to have their own independent and strong country, even today after the Holocaust, it is precisely this world-wide anti-Israel media campaign. We see here again, barely half a century after the murder of 6 million Jews of Europe by apparently civilized peoples, how easy it is for the modern media to excite the masses against Jews. Journalists are the new priests, preaching hatred. Some do so explicitly – but most do it in a more "politically correct" manner: by selective information (i.e. withholding relevant information) and by disinformation (i.e. peddling false information)[371]. The message "Israel is the bad guy" can be transmitted loud and clear in tacit, subliminal ways – by the choice of pictures, by background music, by the tonality of voiceover, by the wording used, and many similar propaganda tricks.

The way things are going, I sometimes fear that one day soon, if we are not careful and we do not react energetically to this new war against the Jews, the world as a whole will conspire to erase our race from this planet. The United Nations will vote to annihilate us, using all sorts of pious arguments to give themselves a good conscience about it. They will say it is a necessity for the sake of world peace and international progress. Everyone will be relieved and happy at last; a sense of unity and common purpose will pervade the world.

An agency will be created and funded to overview the complex operation. Employment will increase and the economy will be stimulated. The Red Cross and Red Crescent will be appointed to ensure that humanitarian standards are maintained in this worthy cause. They will visit the construction sites of modern, computerized killing factories, and certify their painlessness and hygiene. If some of the Jews dare object or rebel, Amnesty International and Peace Now will brand them as terrorists. Other registered NGOs will make sure that, to be fair, all Jews are included in this Final Solution, and none are allowed to convert to other religions or to plead to have been Israel-bashing atheists. It will all be done cleanly and efficiently, putting Hitler and other predecessors to shame.

This is I hope an extreme, nightmare scenario – but who would have imagined the Shoah humanly conceivable a few years before it happened? We cannot ignore that Iran's current threat of nuclear war against Israel is looked upon with utter insouciance by the world's political authorities, media and populations[372]. Many may be suspected to hope Israel will indeed be "wiped off the map". This is not a mere Islamist or Palestinian/Arab dream, but the secret desire of many anti-Semites in the West, on the Left as well as the Right. The bloodbath will surely not end there. Experience of past pogroms shows that once the killing orgy starts, it is hard to stop. No Jew in the world, whatever his or her political leanings, will be safe.

People of good faith must rally fully behind Israel. This Jewish State was created for a purpose, to ensure the future protection of all Jews against any velleity of genocide. Its necessity is manifest still today.

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370 Even while loudly accusing Israel of having genocidal intentions against the Palestinian Arabs. But there are no such velleities among Jews – it is a pure invention of Israel's enemies.

371 See for instance the website www.camera.org which monitors some media.

372 Consider also the absurdities emanating from the current so-called Human Rights Council of the UN. See http://www.unwatch.org.

18. The Chanukah lights miracle: a new, more logical solution to the problem (2009)

During the eight days of the Chanukah festival, or festival of lights, Jews light candles every evening. The reason for this, tradition tells us, is that when in the 2nd Cent. BCE the Maccabees drove their Seleucid enemies out from the Temple, they wished to immediately resume its regular services, including the daily lighting of the menorah. However, they found only one sealed container, with enough pure olive oil for only one day's burning. They knew that it would take them eight days to resume a regular supply of oil[373]. They nevertheless lit the menorah and miraculously the available oil lasted eight days.

This story is mentioned in the Talmud, in tractate Shabbat, page 21b: "The vial contained sufficient oil for one day only, but a miracle occurred, and it fed the holy lamp eight days in succession"[374]. In a commentary to the later *halakhic* (i.e. Jewish law) work called Arba Turim, vol. II, chapt. 670, §2, R. Joseph Caro (also known as the Beit Yossef) raises a logical problem in relation to these reported events. ***If there was oil for one day and it miraculously burned for eight days, why do we celebrate the festival during eight and not merely seven days?*** He proposes three hypothetical scenarios to solve the problem[375], but upon closer examination all three are found wanting in some respect, casting some doubt on the whole thing. The three scenarios proposed and their difficulties are as follows:

1. One possibility is that the *kohanim* (priests), assessing the situation realistically, decided from the start that they would pour one eighth of the regular measure of oil into the menorah lamps every day, so that the one-day oil supply would last eight days though only for part of each night. As it happened, the one eighth measure burned through the whole night every night for eight nights. This solution is interesting because it proposes an eightfold miracle. The main difficulty here is that by not filling up the menorah vessels they were supposedly not fulfilling the legal or at least

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[373] The Beit Yossef explains this eight day delay as either (a) due to their being ritually impure for temple service and needing seven days to get purified plus one more day to gather and press olives, or (b) due to their having to send for oil far away, a journey of four days there and four days back.

[374] A question arises regarding the wording of this sentence. Is the subject of "it fed the holy lamp" the vial or the oil? If we assume it is the vial, then the most fitting scenario would be the one labeled as number two; but this scenario leads to the difficulty of 7 days instead of 8. Therefore, we must assume "it" refers to the oil.

[375] It is not sure where the Beit Yossef gleaned this information. A rabbi I asked said that the sources for two of the proposed scenarios are thought to have perhaps been the Ritva and the Tosefot R. Peretz.

traditional requirement for this ritual[376]. Another criticism leveled is that such a calculated act would have implied uncharacteristic lack of faith (at least on the first day, before the miracle was first manifested). Another traditional explanation of this first scenario is that the kohanim divided the available oil into eight parts with the expectation that each part would miraculously last all night; and the difficulty with that solution is that it is in principle not proper to deliberately rely on miracles.[377]

2. An alternative solution proposed is that the kohanim poured all the oil they had on the first day into the menorah cups, as normally required, and (a) the miracle was that the oil cruse was not emptied as they poured oil from it but remained full all the time (as in the miracle by Elisha mentioned in II Kings 4:4), or perhaps (b) the level of oil in it miraculously rose up again during the night so that it was full again by the morning, or perhaps (c) it refilled entirely in the morning after the oil in the menorah was burnt out so they could pour oil from it again. This happened again on the second day, on the third, etc. – and thus they were able to make the menorah burn normally for eight nights. However, here the main difficulty is that this scenario implies only seven miraculous events: for either the first day or the eighth day must be regarded as non-miraculous[378]. In other words, this putative solution does not actually solve the problem initially posed! (A possible reply to this objection would be to say that there were eight days of miraculous oil, and a full measure of oil was left for the ninth day – but then we might ask why was a superfluous eighth miracle performed?)
3. Another proposed solution is that the kohanim poured all the oil they had on the first day into the menorah lamps, and the miracle was that (a) the menorah flames did not at all burn out the oil, so that a full measure of oil was available in the menorah the next day, or perhaps (b) the level of oil rose up again in the menorah every morning when all the previous night's oil was burnt up. This happened again the next day, etc. – so that the menorah could be lit for eight nights as required[379]. This solution is a bit of a

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[376] Maybe they were halakhically permitted to do so, since the Beit Yossef does not comment negatively on this practice here. Perhaps the legal requirement to fill up the menorah before lighting it is merely *derabbanan* (rabbinic) and not *deoraita* (biblical). I am told the menorah ritual is not counted as one of the 613 *mitzvot* (commandments). The Torah passage concerning it, viz. Exodus 27:20-1, is very brief and does not answer such questions. See also Rambam, Mishneh Torah, Avodah, Daily and Additional Sacrifices, chapt. 3, law 3, which mentions daily cleaning of the menorah. This matter needs to be further clarified.

[377] Someone suggested to me that perhaps they filled only one menorah cup for each night, rather than partially fill all seven of them every day. However, upon reflection, this is not a better hypothesis, in that they would not manage to completely fill that one cup each day, since one eighth part of the oil daily cannot fill up one seventh part of the menorah (and this is all the more true if we take into consideration the continually burning western lamp – see later footnote regarding that)! Not to mention that lighting only one branch of the menorah per night would probably not be halakhically acceptable.

[378] If (a) the cruse did not empty as oil was poured from it, then the miracle occurred for the first seven days, and on the eighth day there was no such miracle. If (b) the cruse emptied when poured out and refilled miraculously during the whole night, the miracle likewise occurred in the first seven nights, but not on the eighth; whereas if (c) the cruse was miraculously refilled only in the morning, after all the oil was burnt out, then the miracle occurred on the last seven days, not on the first day.

[379] I visualize (a) the lamps as having remained full of oil all night for the first seven nights, rather than assume as usually done the more visible miracle that (b) the oil burnt away during the night and then rose up again in the morning. Either way, the oil burnt away naturally on the eighth night, and did not rise up again the next morning. In hypothesis (a) the miracle occurred all through the night on every one of the first seven nights, whereas in hypothesis (b) the miracle occurred at the end of every night (i.e. in the morning) and therefore seven miracles occurred starting on the second day and ending on

compromise between the previous two, in that it implies that the presumed legal requirement of a full menorah was obeyed every day (unlike the first scenario) and that the miracle actually occurred in the menorah (unlike the second scenario, which rather places the supernatural oil production in the oil cruse). However, this third solution has the same main difficulty as the preceding one, namely that it implies only seven miraculous events – so it is not an effective solution to the problem posed. Either the first day or the eighth must be viewed as non-miraculous, unless we accept (as one rabbi has argued to me) that the eighth miracle consisted in the timely cessation of miraculous oil production!

While meditating on these things, I realized that there is **a fourth solution**, which to my knowledge[380] was not considered by the Beit Yossef or other commentators – a solution more logical than the three he proposed. It is this:

4. The kohanim **poured all the oil** they had on the first day into the menorah (as legally or traditionally required to) and found the next morning that **only one eighth of it had burned out**. So they extinguished the flames and left the unburned oil ($7/8^{th}$) in place, igniting it again in the evening. The next morning they found the same thing had happened and repeated their service. And again the next day and the next, so that the original oil lasted eight nights! This new solution resembles the first, in that the rate of burning is one eighth of the normal rate and after the first night the lamps are lit even though not full of oil, but it is better than the first in that, full of faith, they poured the full measure of oil into the menorah on the first day and then let *Hashem* (G-d) take care of the subsequent events miraculously (by slowing the normal burning process). Note that a service was still required of them every day (snuffing out and rekindling the lamps). And this new solution is better than the second and third in that it implies eight days of miracle, and not just seven like them – so it really does answer the original question. It is such a simple, obvious and elegant solution to the problem that one wonders why matters were made so complicated by previous commentators!

This fourth solution seems to me the most plausible, granting that that the Chanukah lights miracle occurred. But an acquaintance of mine, who prefers to remain anonymous, has suggested *a fifth solution*, which does not assume any such miracle occurred, as follows:

5. The kohanim may have used *slower burning wicks* with a daily one-eighth measure of oil as in the first scenario or using full lamps to begin with as in the fourth scenario! This is a neat solution, assuming the required shortening of wicks was halakhically and physically possible (and that they were able to accurately predict the length of wick needed to retard oil consumption). This hypothesis recognizes that not just one but two variables affect the consumption of oil: namely, the quantity of oil used and the type or length of wick. Of course, this is not such a nice solution from a religious point of view, in that it denies the miracle parameter given as a premise by the Talmud. If this naturalistic suggestion is nonetheless preferred, it must be supposed that what we are

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the eighth. Note that in case (a) the kohanim needed to extinguish the lamps in the mornings and light them again in the evenings, whereas in case (b) the lamps were naturally extinguished and the service consisted only in rekindling them.

380 I assume this hypothesis is a *chidush* (innovation) – if not, forgive my ignorance and tell me about it!

celebrating by lighting the Chanukah lights is simply the miracle of victory in battle, as mentioned in our prayers throughout the festival.

Whatever all that may be[381], I take this opportunity to pray Hashem to make many miracles for the Jewish people today, especially to save Israel from its many internal and external false friends, opponents and enemies. Written and distributed during Chanukah 5770.

(With many thanks to R. Mendel Pevzner for his recent lecture on this topic, which revived my interest in it, and to R. Yacov Holzman for his kind help in researching and translating relevant sources.)

Postscript

In writing the above account of the miracle of Chanukah, my motive was not to argue as to its historicity. It was (as always) primarily to teach logic. I wanted to help unravel a logical problem long known in Jewish tradition, while staying within the bounds set for Talmudic discussions. The method was to visualize the three known alternative solutions in as much detail as possible and consider their consequences, and then to see if additional solutions could be suggested. This yielded the fourth solution. A fifth solution, suggested by an acquaintance, was outside the Talmudic bounds, but quite legitimate as a scientific explanation.

However, reacting to the above article, a reader wrote to me suggesting that the explanation for the eight days celebration was just a wish by the Maccabees to celebrate belatedly the festivals of Succoth and Shimini Chag Atzeret, which they had missed due to being busy fighting. She offered as evidence 2 Maccabees 10:6-8 "And they celebrated it [the purification of the sanctuary] for eight days with rejoicing, in the manner of the feast of booths, remembering how not long before, during the feast of booths, they had been wandering in the mountains and caves like wild animals. Therefore bearing ivy-wreathed wands and beautiful branches and also fronds of palm, they offered hymns of thanksgiving to him who had given success to the purifying of his own holy place. They decreed by public ordinance and vote that the whole nation of the Jews should observe these days every year".

But to my mind this statement does not contradict the Talmudic account. That year, they celebrated Succoth late, but it was obviously not their intent to shift this biblically ordained festival forevermore to the 25th of Kislev. The last verse makes clear they instituted a new festival (viz. Chanukah) for future years, in remembrance of this historic occasion. It is not

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381 One final issue to mention parenthetically. After writing all the above, I found out about the "western lamp" that (at least according to some opinions) had to be kept alight continually (i.e. during the day as well as the night). This was one of the branches of the menorah – either the one on its west side or its central one (depending on how the menorah was oriented; see Menachot 98b). Let us briefly consider the implications of this additional factor on the various hypotheses above treated. Presumably, an oil cruse like the one the kohanim found contained enough oil for one day of normal service – i.e. enough too for the daytime western lamp. In that case, in the first solution the kohanim simply divided the oil into more fractions, but each fraction (including that intended for the western lamp) miraculously did its usual job for eight days instead of just one; more precisely, the continual lamp would receive its allotted portion of oil twice a day, in the morning and in the evening. In the second solution, the oil cruse always miraculously provided the oil required, including that for the western lamp. In the third solution, the full measure of oil was poured on the first morning into the continual lamp, and at the evening service it was miraculously either still full or it rose up again. In the fourth solution, the rate of burning must have been miraculously slower in the western lamp than in the others, since it had to burn twice as much, i.e. both day and night.

logically excluded, though not mentioned here, that one of their motives may have been to remind us of the miracle recounted in the Talmud, that one day's supply of oil sufficed to keep the menorah burning during those first eight days. It is still of course quite true that we may reasonably doubt the very occurrence of a miracle. Faith is required to believe in it.

It is true that the historical books of the Maccabees do not mention the miracle described centuries later in the Talmud, and that is of course suspicious. Looking further into the matter, I found the following[382]: 1 Maccabees 1:21 informs us that the menorah was earlier stolen by Antiochus IV Epiphanes: "He arrogantly entered the sanctuary and took the golden altar, the menorah for the light, and all its utensils". In 1 Maccabees 4:49, we learn that, after the Maccabees had purified the temple, "They made new holy vessels, and brought the menorah, the altar of incense, and the table into the temple". Presumably, this means that a new menorah was made at this point; this must have taken some time to do. In 1 Maccabees 4:50, we are told: "Then they burned incense on the altar and lighted the lamps on the menorah, and these gave light in the temple". This is confirmed in 2 Maccabees 10:3 they "set forth… lights".[383]

The Jewish revolt against Seleucid domination occurred in 175-135 BCE, roughly a century and a half after the conquest of Judea by the Greeks under Alexander the Great. After the latter's death, his successors split the empire in two; the Seleucid half was based in Syria and included Judea in its dominions. The Temple was liberated in 165 BCE, but the war continued for many years after. The first book of Maccabees is thought to have been written quite soon after the events it describes, sometime in 135-63 BCE, possibly circa 100 BCE, which gives it considerable authority. It seems to have been originally written in Hebrew, by a Jew living in the Holy Land; but only a Greek translation has survived. The Rabbis did not include it in the Jewish canon, though it is quite pious and patriotic, possibly because it seems to have been written by a Sadducee. The second book of Maccabees was apparently written rather later in the 1st Cent. BCE and directly in Greek by a Jew living in Egypt. It seems to be a much more second hand and revised account of events. Compared to the first book, it is less of a history and more of a religious tract. In short, it is less reliable, but is still considered to have some value as history.

Be all that as it may, it is not unthinkable that, however well-informed the first author may have been on many other matters, he may still not have been privy to the information about the miracle of the lights that the Talmud later reported. And if this is true of the earlier author, it is all the more true of the later one. In other words, there is still room for faith regarding this report.

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382 See http://www.livius.org/te-tg/temple-treasure/menorah.html.

383 No mention anywhere in these books, note, of a single leftover cruse of oil or that the oil it contained lasted eight days. One would think such a miracle would have been mentioned. Confronted with that criticism, a rabbi once replied to me that miracles were so common in those days that it was not felt necessary to record them. However, one can reply: how would he know for sure? To say so is just an act of faith.

Book 6. NO TO SODOM

No to Sodom is an essay against homosexuality, using biological, psychological, spiritual, ethical and political arguments.

1. Picking up the gauntlet

This is an essay against homosexuality.

Frankly, the subject of homosexuality is very distasteful to me. I would prefer to ignore it altogether, so as not to be mentally tainted by it and not to be in any way associated with it in other people's minds. Homosexuality existed in the world around me when I was younger, but it was something one hardly ever came across. But nowadays, the media keep pounding the subject into our minds, so that hardly a day passes without it being brought to our reluctant attention.

It is as if the homosexuals are not content with being homosexuals, but additionally want to force their presence on the rest of us. They are ethically and politically aggressive, demanding that everyone else consider them and treat them as normal. Nay, more: they even want us all to follow their way, and our children to be educated to do so.

Just recently, in the city of Geneva, Switzerland, the erstwhile capital of Calvinist morality, a shocking advertising campaign was launched, ostensibly to encourage homosexuals to use condoms[384]. Large posters showing nude males playing hockey and nude females[385] sword fighting were posted all over the city. A supposed implication of this campaign is that many sportspeople engage in homosexual acts in the changing rooms (whether this is common or not, I do not know), and it would seem socially responsible for the public health authorities to remind them to take precautions to avoid diseases.

But what of the education of the children who see such posters? What of the sensibilities of purer souls, who would never even think of such acts were they not told about them? One can only suppose that such campaigns are only superficially to do with public health or targeted at homosexuals. In view of the advertisers' indifference to the value of sexual innocence, it must be assumed that the real motive of such campaigns is to *promote* homosexuality.

This philosopher has therefore decided to analyze the subject of homosexuality[386] – so that such people not get away with their sexual revolution. They think they've got it made, ethically and politically; but no, they can surely be refuted and defeated. They can be challenged, not just emotionally, but also by rational means.

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384 Geneva, by the way, organizes a yearly fest called the "Lake Parade", during which some half a million people (including a large number of apparent homosexuals) dance for hours on end – in many cases hopped up on drugs – to the deafening sounds of "techno music".

385 What they have to do with condoms, I am not sure. Perhaps they are bisexuals.

386 I would have preferred not to get my hands dirty dealing with this subject, but then it occurred to me that "you can't clean up a place without raising dust".

Our primary task is to try to understand the psychology of homosexuals, so as to objectively explain why they are as they are, and moreover why they ought *not* to be as they are (and how they might change). We have to show convincingly that such behavior is abnormal and harmful, for the individuals concerned and for society as a whole. We must also consider the arguments of those who defend homosexuality, and show the fallacies they involve.

We must also look at the propaganda, social, political and legal means used by the proponents of this movement in pursuit of their goal of legitimatization. And to complete the analysis, we must consider what can be done to oppose these recent tendencies in our society.

Homosexuality has in a matter of only a generation passed from banned activity to widespread social phenomenon, even fashion. This is surprising and appalling; yet we encourage ourselves with the thought that social change can move equally fast in the opposite direction.

2. Homosexuals defined

Let us first clarify and define some terms. Forgive the explicit language sometimes used here.

Concerning the terms "sex" and "gender": they mean the same thing, of course – they both refer to the distinction between males and females. But the more colloquial term "sex" can sometimes, in the context of a discussion like the present one, be confused with reference to the sex act – so the term "gender" (which was till recently only used by grammarians) seems often preferable.

Males and females are distinguishable physically, mentally and behaviorally. They have markedly different anatomies (sex organs, hormones, shapes and sizes, facial appearances) and genetic makeup (sex chromosomes), somewhat different feelings, thoughts, attitudes and characters, and somewhat different behavior patterns. There may also be spiritual differences between the sexes (and maybe even sexual differences between souls).

Thus, gender is a complex of many factors, some of which are clear-cut, while others are more difficult to define precisely. Still, it is quite amazing how quickly we are, in the vast majority of cases, able to "tell" a man from a woman at a glance (although sometimes we are uncertain or wrong in our initial assessment).[387]

Broadly speaking, heterosexuality refers to sexual relations between people of different sexes – i.e. a man and a woman, while homosexuality means sexual relations between two (or more) people of the same gender – i.e. between two males or two females.

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[387] Note, though it happens extremely rarely, that there are borderline cases not easy to classify. For instance, people who have both male and female sex organs (hermaphrodites). According to what I have read, these people are usually predominantly male or female, whether due to their genetic makeup, their hormonal balance, their psychology or other factors (or combinations of factors). Such people do admittedly (very occasionally) present a difficult problem for sexual ethics; but in view of the many parameters involved, this problem can only conceivably be solved on a case-by-case basis (i.e. by casuistry, using *ad hoc* insights of wisdom).

Another difficulty occurring in exceptional cases is the discrepancy between genotype and phenotype, i.e. between a person's genetic sexual identity (XX or XY) and their sexual morphology (male or female sexual organ). Is a genetic male with a female sex organ to be counted as female, as superficially apparent, or as "really" male? Likewise, what is a genetic female with male sex organ to be counted as? Hard to say. Note that such disorders are fatalities, mostly due to genetic defects; also, such people lack reproductive ability. The moot question here from an ethical standpoint is: should sex between a normal man and a "dubious" female, or between a normal woman and a "dubious" male, be considered as homosexual or heterosexual? A humane answer would seem to be: act according to outer bodily appearances; but many scrupulous heterosexuals would probably prefer to preempt such ambiguities by asking their partners to take a genetic test.

Heterosexuality and homosexuality are distinguished with reference to the "sexual relations" they involve. However, since sexual relations are occasional, how shall we define "a heterosexual" or "a homosexual"? Because our discussion here is focused on homosexuality rather than heterosexuality, we must propose the following.

A heterosexual is someone who, occasionally engaging in sex, always does so *exclusively* with a member of the opposite gender (i.e. never with one of the same gender). A homosexual is someone who occasionally has sex with someone of the same gender (whether or not he or she also occasionally has sex with someone of the opposite sex).

Thus, under our definitions, a bisexual, a male or female who has sexual relations occasionally with men and occasionally with women, or with both at once, is a homosexual. That is, whether someone only turns to the same gender for sex (an exclusive homosexual) or sometimes also turns to the opposite sex (a bisexual) – such an individual is, for all intents and purposes here, to be termed "a homosexual".

These distinctions are important to note, because apologists of homosexuality often cunningly use bisexuality to blur differences with heterosexuality in peoples' minds. Vague terminology is used to confuse issues.

It is clear that a person can be called homosexual only if he or she engages in sex with someone of the same gender *knowingly and willingly*. If he or she did not know the sex partner to be a transvestite or transsexual[388], or if the sex act occurred under coercion or before being mature enough to understand what is happening, then he or she is obviously not a homosexual, but simply a victim of homosexual trickery or rape.

The question may be asked: is a person who has engaged in homosexual activities (once or more) in the past (recent or distant) to be called a homosexual? The logical answer would be: yes – unless or until that person has sincerely regretted past deeds and resolved never to repeat them. For an unrepentant past homosexual is surely more susceptible to homosexuality than a non-homosexual. Only a repentant past homosexual may properly be called an ex-homosexual.

Some people, of course, are neither heterosexual nor homosexual. They may have no sexual relations at all (through voluntary abstinence or without choice, for whatever reasons). Some heterosexuals, homosexuals and people without sex partners sometimes engage in activities resembling sex by themselves, i.e. alone (masturbation)[389].

This brings us to the next question: what is meant in the above definitions by "sexual relations" or "having sex"? The primary intent here is to refer to *physical acts or events* producing sexual sensations in one or more of the people involved.

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[388] When referring to transsexuality, we must distinguish two sorts. If someone is born with an 'intersex' condition, like a hermaphrodite or someone whose sexual genotype and phenotype are at odds, it would seem biologically and medically ethical to legally allow them to have corrective physical treatment. But this is very different from someone normally constituted who *willfully* changes sex; for in such case, there is no conceivable biological or hygienic justification for surgery.

[389] Some people go so far as to have sex with members of other species of animal (bestiality or 'zoophilia'). Fortunately, this seems to be extremely rare – but there have been times and places where it was more common (and it may yet again spread, judging by current Internet trends). In the present context, we may view this as a farfetched sort of masturbation (although it is much more than that, of course).

Is a mere hand caressing someone's arm, or a kiss on someone's cheek, or a gentle hug – to be termed a "sex act"? The answer is, obviously, sometimes: yes. It is yes in cases where such conceivably non-sexual acts arouse sexual sensations, however vague, in at least one of the persons concerned. Even a seductive smile, a tone of voice or a perfume can be considered a sexually charged phenomenon, in this perspective. When judging the nature of volitional actions, we must especially focus on their *intent*. A smile or caress without sexual intent is obviously not comparable to one with sexual undertone. But such cases would be the minimal degree in a wide continuum of possibilities.

At the other extreme of this continuum, there are a host of sex acts involving active use *of the sex organ(s)* of the person(s) involved. That is, when a sex organ is actually touched by some part of the partner's body. And between these two extremes, there are an infinite number of possible acts or events, of greater or lesser sexual implication.

This infinity of varieties of sexual activities and of degrees of sexuality should not, however, divert our attention from the central defining issue: whether the physical act or phenomenon concerned, whether "lightly" or "coarsely" performed, produces or does not produce *sexual sensations*.

A phenomenological remark is worth making here, concerning the varying quality of sexual sensations. Every sex act arouses a particular sort of sexual sensations – these sensations are evidently not all one and the same. The sensations aroused within heterosexual sex differ from each other, and no doubt from most of those of homosexual sex or of masturbation. This means that homosexuals are not attracted to just any sexual sensation, but specifically to the peculiar sensations that homosexual acts, perceptions or imaginings arouse in them.

3. Homosexual tendencies

As we all know, sexual sensations are not only produced by various physical contacts, movements, pressures, temperatures, sights, sounds, smells and tastes – they can be aroused by mere thoughts. Physical deeds and words are the tip of the iceberg of sexuality. Mental imaginings and desires can equally well produce sexual sensations.

Indeed, most (though not all) sexual sensations ostensibly caused by physical phenomena are due to intermediate thoughts. It is usually the thoughts that generate the sexual sensations, by attaching sexual value to the physical phenomena (e.g. a kiss or an odor). In this context, note that the physical phenomena of pornography (magazines, videos) do not cause sexual sensations directly, but by way of stimulation of thoughts and actions that in turn cause sexual sensations.

The question therefore arises: how are we to classify people who are in practice heterosexual or without sex partner, and yet whose thoughts – i.e. whose mental sexual fantasies and desires – are directed (occasionally or exclusively) at people of the same gender? The simple answer is: insofar as such people experience actual sexual sensations directed at people of the same gender, their "sexual orientation" may be considered as homosexual to that extent.

Note well that it is not the content of thoughts that determines sexual orientation. For instance, we are here (writing or reading the present essay) thinking about homosexuality, but if such mental consideration produces no sexual response in us, we are not being homosexual. If, on the other hand, at the very thought of homosexuality, feelings of desire or physical pleasure are experienced by someone, there is a problem.

Even then, such feelings may only be due to the mind's inherent trickery, its impulse to flirt with contradiction. The fear of having homosexual responses may by itself cause sexual sensations, as the subject's attention is warily drawn to the bodily location of sexual sensations in search of possible such sensations. In other words, self-doubt may generate test sensations resembling those feared.

Nevertheless, aside from such fleeting distortions of reality, a person may indeed have evident and enduring sexual sensations in the presence of some persons of the same gender, even without ever having engaged in homosexual acts. Such a person may correctly be said to have *homosexual tendencies*, as distinct from being a practicing homosexual.

It would be unfair to class this person as a homosexual, period, since he or she does not actually engage in homosexual acts. However, a further distinction must be drawn between two sorts of people with homosexual tendencies: those who *resist* these tendencies and those who *indulge* them.

Clearly, someone with apparent homosexual tendencies whose volition is not influenced by them in imagination or action, is not comparable to someone who mentally flirts with these tendencies even though without actually putting them in practice. In the first case, the one experiencing apparent homosexual lust regards it as involuntary, and does not identify with it, but on the contrary seeks to be rid of it. While in the second case, the lust is tolerated and even positively enjoyed, so that it is effectively voluntary[390].

Although the two have similar bodily feelings with homosexual orientation, and both abstain from corresponding physical actions, the one remains mentally detached, whereas the other is mentally complicit. A moral distinction between them is clearly justified: the former is effectively innocent, the latter effectively guilty, of blame for the visceral responses. Of course, these bodily inclinations may be due to past thoughts, words or deeds with a homosexual taint – but in one case, the past is mitigated by the present, whereas in the other it is aggravated.

This is said in passing, so as to help people with apparent homosexual tendencies who wish to be rid of them. The method recommended is the same as for any psychological quirk – develop frank awareness of the sensations felt; then, awareness of their eventual sources in unchecked thought, word and deed; then, gradually, through more mindful thoughts, words and deeds, bring your psyche and body under control. This is essentially a meditative method – and therefore a natural, deep, powerful and lasting therapy.

In this context, I would like to draw attention to the intellectual dishonesty of advocates of homosexuality. They deliberately use generic terms like “same-sex attraction”, ranging from outright sodomy to vague homosexual feelings not so far put into action, in order to *fudge* the great psychological and moral differences that exist across this broad range. The aim and effect of such neutral sounding vocabulary is to make active homosexuality seem as innocuous as mere homosexual tendency, or the latter as committed as the former. Additionally, it sends a message to the uncommitted that, since they are already equivalent anyway, they might as well put their desires into action.

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390 The feelings are not translated into action merely out of lack of opportunity, or perhaps just timidity (fear of social disapproval), not out of any moral rejection.

4. The biological role of sex

Advocates of homosexuality claim it is something "natural", pointing out that some bonono monkeys do it[391]. Is that a valid argument? Are these people bonono monkeys? Or are bonono monkeys their spiritual guides? Do they mean that because some bonono monkeys are pedophiles, humans should be so too[392]? Closer to home: could we argue that because some people murder, we should all do so? Obviously not! Ethics is never based on what people (or animals lower than them) actually do or don't do; it is about what they as rational volitional beings preferably should or shouldn't do.

Since the issue of homosexuality is one concerning sex, we should begin our analysis of the subject by considering the biological role of sex. Heterosexual sexual activity is primarily intended for *reproduction*, so as to perpetuate the species. This is evident and undeniable when we consider our anatomy and behavior. Man penetrates woman; he ejaculates sperm that (usually) fertilizes her egg; this eventually gives birth to a new human being.

If the sex act was just for pleasure, comfort or love, we might have had the same sort of sex organs, but they would not have been instrumental in transmitting genetic material. These features of our reproductive system would have been absent. Gene transmission is evidently the main function of our sex organs, and any alleged additional value of sex – as a means to erotic pleasure, comfort or love – can only be incidental.

Another important biological observation to make is that we have a strong *instinct or drive* to engage in sex. That is to say, we commonly experience strong feelings in our sex organ, and elsewhere in our body and mind, which influence us to pursue sex. The matter is not left open

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391 They also point to hermaphroditic snails. But in this case, the physiological differences with humans are so pronounced, the argument is not even worth considering. These "same sex" snails are naturally designed to reproduce together, whereas human homosexuals are not. It is as absurd as arguing that men may or ought to scatter their seed on the ground, since trees do it! Whereas tree seeds can grow from the ground into new trees, it is not the case with human sperm.

392 Incidentally, it is worth pointing out that the practice of homosexuality by some bonono monkeys does not imply that such practice is natural and normal even for that species of anthropoid. For, granting that these animals are a higher species (and they are genetically, anatomically and on the evolutionary scale, very close relatives of humans), we can safely say that they have a high degree of volition (almost as high as humans, except that their cognitive powers are evidently less rational). In that case, it is appropriate to speak of bonono monkeys as making some free choices, and therefore as being subject to non-verbal considerations of good and bad. The phenomenological given of homosexuality in that species does not tell us whether or not bonono monkeys are conscious of "doing wrong" when they engage in such acts (or whether other members of their species might or not find it objectionable). Thus, the argument put forward in defense of such acts among humans, with reference to the behavior of some monkeys, is just a smoke screen to evade the issue.

to our occasional free choice for the fun of it; no, our body and mind are programmed to push us to engage in sex often or even as often as possible.

We can easily see why such a conatus would exist. Its biological function is to encourage actual, frequent coitus, followed by reproduction, so that the species has a maximum chance of continued existence.

The physical pleasure of sex must be viewed in this context; it is intended to entice and incite us to sex. Without the reward of pleasure, we would be less likely to engage in sex; and if it promised us only pain, we would avoid it altogether. The same reasoning can be applied to other motives commonly given for sexual pursuits: that it is psychologically comforting or provides an opportunity for bonding (i.e. love) between human beings. These are mental and even spiritual pleasures, which likewise encourage and reward us for sex.

Moreover, it is biologically valuable for couples to stick together after their sexual encounters, because this ensures that the children they eventually give birth to are taken care of, i.e. this maximizes the chances of survival of the species.

From such biological considerations, we can easily conclude that the sexual orientation programmed into us by nature is necessarily heterosexual. Our normal, natural tendency is heterosexual, whether we are a man or a woman. This is clear from the anatomy of our sex organs and our emotional drives, and from the scientific explanation of their biological role.

Note that this conclusion is not solely based on statistics, i.e. on enumerating what proportion of humans are heterosexual, although statistics can also be appealed to, to confirm that most people have this orientation.

5. Non-reproductive sex

No one denies that homosexuals exist – but their existence in the population does not by itself prove such behavior to be natural or normal. The proponents of homosexuality sometimes present statistics (some claiming that as many as 15-20% of the population are openly or secretly homosexual) – but such an argument has no value in proving normalcy or naturalness.

Human beings have freewill – so their behavior is subject to 'ethical' evaluation, and cannot be taken as a deterministic 'given' (like the behavior of inanimate matter, plant life, or lower forms of animal life).

Aware of this weakness of the statistical argument, the proponents of homosexuality next argue that, while it is true that sexuality originally arose for reproductive and species-survival purposes, human beings, as higher animals endowed with freewill, can voluntarily bypass the reproductive aspect of sex, and focus exclusively on the adjacent sensual or emotional aspects (which we may label hedonistic or eudemonistic).

Just as our culture accepts that heterosexual sex need not be aimed at reproduction, so likewise homosexual sex (which is never for reproduction) is – they say – legitimate. In this perspective, the distinction between male and female is irrelevant, and any combination of partners would seem acceptable.

Moreover, they argue, such non-reproductive sexual pursuits still have biological value, insofar as they facilitate the lives of people, making them more pleasant, comfortable or loving. They ask: What is wrong with that? So long as no one is hurt, what objections can moralists raise?

Indeed, they go on, so long as homosexuals are content, they can be useful members of society. They point to homosexuals who have made their mark on history: Alexander the Great, Leonardo da Vinci, and so on. And there are many current examples of homosexuals who are (at least apparently) "well-adjusted" socially.[393]

Such arguments must and can be answered. The first fallacy to note is the implied moral equivalency between non-reproductive heterosexual sex and homosexual sex.

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[393] Of course, this tells us nothing, since external success is not proof of inner balance and peace. How did Alexander or Leonardo feel and behave inside after awhile? Moreover, how did they feel about their life of homosexuality just before they died – proud and gay, or ashamed and aggrieved? If moral judgments are based on partial data, they are likely to be skewed; it is important to try to consider the total picture over time, to properly assess conditions.

As we saw above, the sensual and emotional aspects of sex are biologically justified with reference to reproduction and survival of offspring. Nature has programmed sexual desire into us, to urge us to reproduce and to stay on with our mate so as to nurture the offspring of such reproduction.

This heterosexual desire is legitimate even when it is not consciously aimed at reproduction, or even when it is consciously intended to avoid reproduction (e.g. by use of condoms or pills), because it can always (and very often does, if only accidentally, but more often through growing attachment) lead to reproduction and subsequent family life.

On the other hand, homosexual sensual and emotional pursuits have no such justification, since they are inherently sterile and non-cohesive. They are ego pursuits without redeeming feature comparable to heterosexual sexual activities. Their only goal is physical or emotional gratification; they are radically divorced from any biological basis.

This is why it is correct to say that homosexuality is not a *natural* sexual orientation – but one inherently *deviant*, i.e. one that has lost track of its original goal, and become diverted into incidental objects (i.e. people of the same sex). It is as if we gave a monkey a pen to write with, and he used it instead to scratch his behind. Homosexual sex is in fact a parody of sex, a sort of disoriented role-play.

The above discourse should not be interpreted as an injunction of heterosexual sex at every opportunity[394] in order to make as many babies as possible. This may indeed be seen as Nature's program; but remember that Nature relies on probabilities to achieve its ends. The point intended is only that, to at all discuss sex, we have to first comprehend the natural significance of it. Without such prior analysis, it is impossible to grasp why homosexuality is unnatural and even against nature.

It is true that nowadays it is possible – or in the very near future, it will be possible – for homosexuals to have children through various medical interventions. But here certain ethical questions have to be asked, like: Has the psychology and happiness of eventual children of such unnatural unions been seriously considered? Can one imagine a worse fate? What is the long-term viability of such artificial 'families'; what kind of twisted human beings would they produce? Have not all human beings the right to be born in natural circumstances, and raised with a reasonable chance of a normal life?

Similar questions can of course be asked with regard to adoption of children by homosexual couples. It is surely criminal to disregard the rights and interests of unborn children or orphans, just out of a desire to be tolerant towards homosexuals and to treat homosexuals as 'ordinary' human beings. The selfishness of those holding such opinions, their willingness to sacrifice children just so as to play the ego-role of tolerance and humanity, has to be pondered on.

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394 With a single partner or every available partner, of the opposite gender. In fact, Nature would seem to prefer humans to stick to one partner (or one at a time), as this tends to ensure offspring are taken care of. But even if many sexual partnerships are made over a person's lifetime, it does not follow that total promiscuity is desirable. Our natures make us somewhat selective, so that some partners seem more attractive than others. This is admittedly often sheer vanity, but it is also often an instinctive choice of the best genetic combination for one's line.

6. Deviance and suffering

Secondly, since homosexuals have similar instead of complementary sex organs, the nature of their sexual activity is not exactly comparable to that of heterosexuals. Admittedly, some of the activities of the two groups resemble each other: e.g. mutual masturbation, oral sex and anal sex, are possible in either mode. But these are precisely the activities that are *not* biologically justified!

When a man loses his sperm through such extraneous activities, whether his partner is male or female, he not only fails to engage in ordinary coitus (theoretically capable of reproduction), but he moreover physically incapacitates himself for reproduction (at least temporarily, through loss of erection and sperm). Therefore, such activities are to be avoided on biological grounds.

Furthermore – and this is equally applicable to a woman – by diverting natural desire towards unnatural objects, a heterosexual or homosexual gradually (by habituation) psychologically incapacitates himself or herself for the demanding task of straight heterosexual sex and living. Even if a man or woman is initially bisexual in outlook, homosexual behavior surely takes its toll and eventually cuts him or her off from heterosexual activity.

It could of course be argued that homosexuals are doing the rest of humanity a favor by *not* reproducing. In view of the world population explosion, with all its nefarious consequences on our economic and social wellbeing, and its ongoing destruction of the environment, it may be regarded as a public service not to reproduce. Perhaps that is the idea of the public health officials who encourage such practices; but is that idea kind?

It could also be argued that, by failing to reproduce, homosexuals voluntarily place themselves outside the category of those fit to survive (as in the Darwinian "survival of the fittest"). That is, their sexual disorientation can be viewed biologically as an expression of some inherent unfitness for this world – which causes them to be "naturally selected" *out* of it.

Let us move on, now, to a more psychological analysis, and raise a third objection to the argumentum of the proponents of homosexuality. They claim that homosexuality makes some people happy – or at least "gay" (i.e. jolly with pleasure, characterized by *joie de vivre*). If this were true, it might constitute a biological argument for homosexuality, aside from reproduction. But is it true? It can very much be doubted[395].

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[395] My own observation of homosexuals, male and female, which I have by chance met over the years, has left me with an impression that they are very immature, in some basic, tragic way; and a sense of some deep rot about them, as if their world is a very sad, grey place indeed. All their outer

It may seem true for some people in the short run, but all tends to indicate that such appearances are deceptive and that sooner or later painful consequences will be felt by the individual concerned. For most homosexuals, the negative consequences are evidently not long in coming. And even when the homosexual maintains a brave, "gay" face (for purposes of self-justification) on the outside, he or she well knows the pain and suffering going on within.

This is true even in today's Western society, which permits and defends homosexuality, and not just in more traditional societies, which forbid and persecute it. For it should not be thought that the private unhappiness of the homosexual comes from social rejection; rather it comes from the fact that homosexuality goes against the grain. Being psychologically, as well as physically, unnatural, it is bound to lead to suffering (i.e. to more suffering than heterosexuality entails).[396]

The use of the word "gay" (and for that matter "pride") is clearly just an advertising ploy, a show of bravado (a pretense). It is a pity that the English language has, since this word was kidnapped by homosexuals, lost a valuable word (which has become impossible to use without evoking the new, homosexual connotation). Linguists are well aware of how words are often used with the exact opposite of their original meaning[397].

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cheer seems to me a nervous veneer. Given an opportunity to be themselves in public, they show their profound rudeness and vulgarity (not surprisingly, considering their impure thoughts and deeds).

[396] Even if homosexual youths might in a first phase appear clean-cut and normal, they will in due course naturally suffer shame and guilt, and other negative effects of their aberrant thoughts and deeds. This is a law of nature – equally applicable to heterosexual youths who opt for a licentious lifestyle. A person's way of life even eventually gets written on his or her face and body language: *The Picture of Dorian Gray* is excellent testimony to that common observation by a famous homosexual (Oscar Wilde).

[397] For example, the verb 'to sanction' may mean to permit or to punish. Note that not only the word "gay" has been hijacked, but also the word "pride". The latter word is, of course, intended to convey that homosexuals are "proud" of what they are (rather than ashamed, as others consider they should be). But the phrase "gay pride", applied to street demonstrations by homosexuals, uses the term "pride" in the sense found in "lions pride" (meaning a social group of lions, the kings of the jungle). The latter, too, is a word-theft that forever diverts and sullies the original sense.

7. Some probable causes

Underlying homosexuality is a basic failure to relate correctly to the commonplace challenge of sex. Long before an "identity problem" arises, the homosexual is simply *a failed heterosexual*. That is, everyone (each according to his or her gender, of course) is naturally endowed with the same phenomenal feelings (those which drive sexuality), but some people fail to correctly identify the actual orientation of these feelings, or fail to persist in trying to fulfill their manifest demands.

Some people become homosexuals because they were sexually abused as children or adolescents, by older kids or by adults. They feel permanently soiled and incapacitated by these early experiences, and are always ashamed or afraid to face members of the opposite sex as a result. For example, a woman might have been a victim of heterosexual rape as a child, and from then on feared and loathed men, and only felt comfortable with other women. Or again, a man may in his childhood have been abused by a homosexual, and thereafter felt too ashamed of his past misfortune to face women confidently.

Some children and adolescents have premature sexual experiences among themselves, which happen to be homosexual (i.e. could perchance have been heterosexual, had those opportunities presented themselves instead). These kids' sexual drives are just dawning, and they have no idea what they are all about. They experiment among themselves, especially nowadays when adults make little effort to shield them from bad influences like pornography. In some cases, such children do as adults become homosexual, having become used to or acquired a taste for that particular sort of sexual encounter[398].

> (It is very important to note this observation, for therapeutic purposes: at the root of the self-identification of many homosexuals with their homosexuality lies an *obsessive attachment* to some early sexual experiences, which they erroneously mentally associate with sexual desire and satisfaction in general. They think such attachment is indicative of some sort of natural predilection of theirs, but it is simply an acquired and eliminable inclination. The problem involved is not constitutional, but merely a psychological limitation, a lack of intelligence.)

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[398] Some take such childish explorations even more literally and become pedophiles, forever trying to recapture their sharp childhood sexual feelings. Of course, not all pedophiles are homosexuals. But it is no accident that the old (less "politically correct") word for homosexual was "pederast" (from a Greek word meaning 'lover of boys'). Of course, not all homosexuals are male – the yearning to revert to childhood is often found in females, too. Note that pedophilia is not limited to dirty old men or women – pedophiles are often quite young, in their twenties or thirties. In the latter cases, of course, we cannot talk of a return to childhood, but must rather call it arrested development: they never left childhood, i.e. their mental age did not follow their physical age.

But this scenario is not the main avenue. A person may begin their quest for a heterosexual partner quite naturally; but, meeting failure after failure in this quest, he or she may end up going in the opposite direction, in the way of a consolation prize or substitute. This may begin tentatively at first – then become a habit and predilection. This sometimes occurs at an older age, even after a lifetime of heterosexuality, when all attractiveness is lost.

It does not matter much where and how the dread of the opposite sex is acquired. It may be due to repeated rejection (for whatever reason, e.g. physical or psychological unattractiveness), or the cause may lie in some parental failure of love or education (causing shyness or inadequacy)[399]. Whatever the cause, the biological challenge of making oneself able to find a (suitable) partner for reproduction has not been adequately met, and that's that. Since the underlying sexual urge, or libido, remains active, even uncontrollably so, the sorry loser looks for another outlet.

Some losers in the mating game opt for masturbation; others for sainthood through abstinence (chastity, celibacy). Some become rapists; some become great artists or sports champions. And some choose homosexuality.

There are of course many other specific ways homosexuality might be adopted. Some people go this route as a life strategy – thinking that they can more easily make their way in life through homosexual seduction, i.e. through same-sex prostitution for economic or social benefits. Another, perhaps most pernicious, road to homosexuality – commonly found today due to the currently popular ideology that it is okay, that it is natural and normal – is to do it willfully, in the way of experiment, for the alleged fun of it. Some people no doubt simply unconsciously drift into it, under the unquestioned influence of their peers or the media.

It is wrong to expect that no negative psychological and existential consequences will ensue from such choices, simply because they were freely made, with a "good conscience" as it were. For it is not the way one enters into such behavior that is its danger, but the inherent nature of the behavior itself. Even if one does not fear it, its dangers remain operative.

One aspect of the homosexual relation that should be noticed is the relation of domination versus submission it often involves, at some level or other, consciously or not, whether the partners are male or female. Such uneven partnerships do admittedly occur in heterosexual relations, too, although male-female combinations are usually complementary. But in the case of homosexual relations, the imbalance is more radical and inevitable, and a "pecking order" is part and parcel of social coexistence between two men or two women.

In homosexuality, because of the anatomical similarity of the partners, one of them must effectively "change sex" (if only behaviorally), to form a "yin-yang" balance. Among males, one of the men must become effeminate, woman-like; among females, one of the women must become masculine, man-like, "butch". This abject personality change is detrimental to both

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[399] Some observers suggest that homosexuality, whether male or female, is often due to the father being overly passive or absent, and the mother being too old or domineering. But it must be stressed that such "environmental" causes cannot be regarded as *determining* homosexuality. Since homosexuals are human beings, they have freewill. Environmental factors (like family problems or social context) can only *strongly influence* behavior, but the victim is still free to resist the pressure of these influences and go his or her own way. There is no excuse, no genuine justification, in the reference to such external factors. However powerful their psychological impact, human dignity remains possible.

partners, making them both contradict their true sexual and human identity. They all become something less than male or female, and thus something no longer quite human.

In other words, it is not some sort of original sexual identity problem that leads to homosexuality; rather, it is homosexuality that generates profound sexual identity problems. Such transformations and doubts are bound to cause deep and lasting suffering in the people concerned. They simply cannot be expected to be without effect and painless.

8. Changing rationalizations

Our society's view of homosexuality has gone through numerous changes in the last few decades. At one time, homosexuality was frowned upon on religious grounds, because of the Biblical interdiction of it. Homosexuals were an object of contempt and mockery; people found them disgusting and avoided them as much as possible.

Then came the "sexual liberation" of the late 1960's and early 1970's, when the hippies opted for sexual promiscuity – which though usually heterosexual, sometimes included homosexual encounters.

Around this time, apologists for homosexuality began arguing that it should be regarded as a *mental* "sickness", caused by adverse family and social circumstances, and thus compassionately excused. Opponents of homosexuality at first tended to accept this semantic shift, viewing the epithet of sickness as an appropriate insult of sorts, a secular replacement for the religious idea of sinfulness. After all, who would want to be considered mentally deranged (even in the way of a victim)?

Realizing this negative connotation, apologists for homosexuality began proposing that it is normal, in the sense that some people are so programmed by Nature, i.e. some people maybe have these peculiar genes, constituting a sort of third gender (or third and fourth genders, if we distinguish male and female homosexuals). They sought in this way to legitimatize homosexuality as neither a sin nor a psychological affliction, but something natural though relatively uncommon.

However, no "homosexual genes" have ever been found (though some researchers have momentarily gained media attention by claiming to have found such distinctive genes). And if you think about it – such genes are hardly conceivable and very improbable according to the theory of evolution. For homosexuality is by definition non-reproductive; therefore, if such a gene ever arose by a spontaneous mutation, it would soon enough be naturally selected out of existence!

Fanciful notions of "a woman's soul in a man's body" or "a man's soul in a woman's body" were floated by the poets, implying that souls have a gender and that these can somehow enter the wrong kind of body.[400]

[400] More generally, a new ideal of humanity was floated, a sort of androgynous, bisexual unisex creature. Men were told to realize the woman within them and become less macho; and women were told to realize the man within them and become more macho. Unisex haircuts and clothing became fashionable. Men (generally depicted as brutes) were encouraged to become more sensitive, talkative and weepy; while women (generally depicted as victims) were advised to get tough and fight back. This general assault on "sex roles" was of course justified in some cases and to some extent, insofar as its

The science-minded suggested that sex hormones might on occasion override the gender determination of the sex chromosomes, ignoring the fact that all cells of a given human contain the same sex chromosomes, so that even if hormonal imbalances produce some unusual visible sexual characteristics, the underlying gender is still genetically engraved (so that no hormonal treatment or surgical sex change can hide the real sex).[401]

The scientists also pointed to hermaphrodites, and similar gender aberrations, some of which are due to unusual hormonal conditions, others to genetic abnormalities. Thus, there are people who have both a penis and a vagina; or again, there are people with a YY sex chromosome combination (or even rarer combinations like XYY, XXX or XXXX), instead of the usual XX of females or XY of males.

However, such cases are extremely rare, and their existence cannot be construed as a scientific explanation of homosexuality, since such people are not necessarily homosexual, and the large majority of homosexuals certainly cannot be classed in this category of physical abnormality.

All such "scientific" talk was of course only meant to hoodwink us common folk into believing that homosexuality is somehow not open to moral judgment. The object of the apologists was to have their cake and eat it too; i.e. to present homosexuality due to unusual *physical* problems, and thus, though an abnormality, something quite natural – implying that we should feel pity and consideration towards homosexuals (as we would to any physically handicapped person).

But this position left homosexuals a bit less than "gay", implying them to be (gulp) victims, if not of Society, at least of Nature. It did not fully legitimatize them, but still left them in the position of second-class citizens. At this point, an ethical offensive began, declaring homosexuality a free choice by fully adult, responsible and respectable human beings – a choice as legitimate and even worthwhile as plain old heterosexuality.

Everyone can decide for himself or herself, they argued, and who are *you* to judge? Various media and politicians pitched in, and the laws of nations were changed. Even constitutions were amended, and a "human right" to sexual "difference" was declared instituted and enforced. Active administrative measures were adopted to ensure homosexuals were treated as equal citizens; people were forbidden to ostracize them.

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purpose was social, economic and legal equality between men and women; but it also served as a ploy in the more specific battle for homosexuality.

[401] In any case, no significant differences in hormone balance between homosexuals and heterosexuals have been found in general – meaning that such proposed physical cause is not an adequate explanation.

9. It is freely chosen

I say: fine. This latest approach is actually a good development, because it takes us full circle and acknowledges what the religious traditions originally implied: namely, that homosexuality is freely chosen conduct. That is, homosexuals are not forced into it by any physical or mental force beyond their power to resist; they could choose otherwise. They freely choose to be what they are and do what they do, and are therefore morally responsible for their condition and their behavior.

The claims to mental or physical sickness or anomaly have all effectively been swept aside, and we are back to square one, with only a single change: now, the current ethical and political "authorities" support homosexuality, whereas their predecessors opposed it. Before, homosexuals were regarded as free agents who chose a wrong path; now, they are regarded a free agents who choose a neutral (if not a positively recommended) path. The evaluation differs; but all agree on the fact of free choice.

The good thing is that the various transitional lies and excuses in defense of homosexuality, which we have reviewed above, have at last been abandoned, and the "ethical position" of the apologists is now clearly and honestly displayed. Now, having brushed aside a host of logically irrelevant issues, we can all return to the central issue, which is: is this behavior, which all admit is freely chosen, *moral, immoral or amoral?*

Now, morality is not a matter of decree, whether by religious authorities, moral philosophers, physicians, psychiatrists, sexologists, journalists, or legislators. It cannot be arbitrarily imposed, but has to be argued for convincingly.

In this light, it should immediately be noted that the posture adopted by the proponents of homosexuality is logically *arbitrary* – they have no arguments (that I have heard of, anyway) that rationally demonstrate that homosexuality is moral or at least not immoral. Their only argument is a relativistic, even nihilistic, one – a claim that there is no such thing as morality, or that no such thing is knowable through reason. They say, effectively: mind your own business – these are consenting adults[402]!

[402] Speaking of consenting adults, consider the following sordid story gleaned on TV news (I think I have the details right). Some months ago, in Germany, a man was tried and convicted for cannibalism. He had met another man on the Internet, and they mutually agreed that, after some homosexual sex, he would kill and eat the other man, which is exactly what happened, apparently in good conscience. The fact of consent obviously does not make an act ethically justifiable.

But an *ipse dixit* objection to their anti-moralistic discourse is logically inevitable. By condemning moral judgment as such, they engage in an act of moral judgment[403]. Another weakness of their dismissive argument is that they apply it *very selectively*, as convenient to their own ends. They certainly consider their political and media defense of homosexuals as moral, since they react with a semblance of "righteous indignation" when anyone (like the present author, in the present essay) doubts or opposes their theoretical and practical initiatives in this regard.

Their position is thus internally inconsistent; it is formally self-contradictory.

Moreover, there are many other fields of human activity where these same people readily recognize the power of reason to decide pros and cons with regard to human behavior – only in this exceptional case (viz. homosexuality), and perhaps a few more cases with similar revolutionary tendencies, is reason considered (by them) as incapable of judging and advising, and all discussion or doubt is verboten (i.e. immoral in their view). This is just attempted intimidation and intellectual thuggery on their part.

The critics of homosexuality, on the other hand, appeal to people's intelligence and good sense. We have above already presented some arguments against homosexuality, which may be characterized as ethical, namely the analysis of the biological role and justification of sex, which hopefully carried considerable conviction. Two more sets of argument still need to be highlighted: one set based on more psychological and spiritual considerations, and another set based on more social and political considerations.

An important aspect of free choice to note here is the following. To say that something is freely chosen is to mean that, however strong the internal and external forces and temptations impinging on the person concerned, he or she has the volitional power to resist them. Will cannot be both free and causally determined; negative influences make the task of positive will more difficult, but they cannot literally overwhelm it.

Moreover, if a person *believes* he or she has no power of resistance to some impulse, his or her power of resistance is proportionately diminished. To act decisively, one has to believe the action concerned to be possible or useful. The beliefs one has *influence* one's will to act; one's beliefs are among the forces that affect (though do not determine) one's course of action.[404]

It follows that the philosophers, psychologists and other advocates, who (in one way or another) tell homosexuals they cannot resist their homosexual impulses or change their ways (this is of course untrue – a lie), are in fact influencing them to yield to these impulses and continue in their ways. That is, they are making it more difficult for people with homosexual tendencies to remain straight or for homosexuals to overcome their current preferences.

Thus, the proponents of homosexuality are effectively *inciting* people to homosexuality; they exacerbate their problems. Inversely, the opponents of homosexuality are helping actual or potential homosexuals to make considered choices, by reminding them that – as human beings graced with freewill – they are potential masters or mistresses of their own sexual conduct.

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[403] "Mind your own business" has the logical form of an ethical imperative – while claiming to be over and above all ethical imperatives.

[404] Regarding influences on volition, see my earlier book *Volition and Allied Causal Concepts*, chapters 5-6.

Ask yourself: which of the two is really kinder to you – someone who pushes you to weakness or someone who gives you strength?

10. Sensuality and perversion

Ethical discourse in general is not logically possible without admission that it concerns beings with powers of cognition, volition and valuation[405]. Without these powers, there is nothing to discuss, no utility in discussing anything, no one to do or understand the discussion or put its conclusions into action. In other words, we must start by recognizing here that we are talking about human beings, who have a rational faculty and freewill. If human beings were machines or subject to fate, there would be no debate.

Furthermore, ethics cannot be limited to physical and (in a narrow sense) mental considerations, but must extend to spiritual considerations. To have powers of cognition, volition and valuation is to have a soul, i.e. a spiritual life. Human beings have a soul (also called a spirit), whose interests (i.e. benefit or harm) must also be taken into consideration, together with the interests of their bodies and minds. To ignore or disregard these considerations is to display a failure to understand the very foundations of ethics.

Thus, ethics – the science of what we (people) may or should do or not do – has to develop with awareness of all aspects of human nature and human existence – not only physiological (including genetic) factors and psychological factors (including familial, social and cultural influences), but equally spiritual factors (the perceptions and conceptions, the exercises of will and the value judgments of the individual person within the body and mind).

All these different factors must be considered and weighed in the balance. To refuse to recognize one domain or the other is ignorance, stupidity, intellectual confusion or dishonesty – it is not a scientifically legitimate posture.

We have already (in the above discussion) dealt with some of the more obvious issues; here, we shall focus on some relevant spiritual issues. Here, we need to stress two attitudes, two postures and tendencies of the soul, which are spiritually damaging or destructive. These aberrations are not found exclusively in homosexuality, but are perhaps found in it more intensely than usual.

The first aspect is excessive ***sensuality***, i.e. a mental obsession with sexual sensations[406]. The spiritual effect of this attitude is that it keeps one tied to lower instincts, even when they have no demonstrable physiological or psychological value.

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405 Regarding the logical preconditions of ethical discourse, see my earlier book *Volition and Allied Causal Concepts*, chapters 17-18.

406 For more detail on the psychology of sensuality, see my earlier book *Meditations*, chapters 21-22.

If a man or woman has no sexual partner of the opposite sex, or has given up hope of finding one (due to some handicap, old age or whatever reason), then logically that person ought to devote himself or herself to more spiritual pursuits. Artificially sustaining sexual desire and pleasure through masturbation, or other deviant means such as homosexuality, serves no useful purpose.

It is a sort of idiotic attachment to a phantom of the original, natural orientation of desire, which is inscribed in our instincts for purposes of reproduction. It is like imagining one has an arm or leg when it has been cut off. All it does is accentuate and perpetuate pain and suffering.

In the case of homosexuality, specifically, such sensuality is further complicated by the fact that the partners involved are of the same sex. This implies that all sorts of man-man or woman-woman physical and mental interactions are involved, which are not inscribed in our nature (which, as we have already explained, is geared for heterosexual relations). The homosexual has to deal with essentially artificial harmful situations. This wrongheaded situation surely takes its toll, at a spiritual level.

Why is sensuality a spiritual affliction? It consists in attaching disproportionate value to passing sensations – in vainly clinging to something as impermanent and insubstantial as smoke. Such a policy is bound to be destructive in some way or other. It is bad enough in the case of heterosexuals, but becomes suicidal in the case of homosexuals, since their existential situation is more complicated by its unnaturalness.[407]

This brings us to the second aspect: ***perversion*** or perversity of spirit. This term is not a hollow insult, but an identifiable trait. What it refers to, generally, is valuing something *because* it ought to be disvalued – i.e. not in spite of its being judged to be in some way negatively charged, but precisely because it is disallowed, forbidden, bad, evil, dangerous, harmful, unattractive, ugly, weird, kinky, ambivalent, queer, dirty, disgusting, repulsive, abhorrent, cruel, illegal, criminal, etc. It is a twisted disposition or preference for the opposite of what reason, after appropriate pondering of the issues involved, recommends.

With regard to sexual desire, specifically, this perverseness is expressed in the way of desiring sexual objects or acts that are out of the ordinary in some distorted way. For examples: an interest in sodomy or a pleasure getting dressed to look like someone of the opposite sex. Some people feel quite indifferent or blasé towards ordinary sexual objects or acts, and are only attracted to things or people that have an air of rot or corruption about them. This attitude is surely an expression of spiritual impurity, and is bound to generate more of it[408].

The error of reasoning inherent in perversion is the imagination that there might be *some extra, hidden pleasure or other value* in what is morally forbidden.[409]. Sexual perversion is thus an exacerbated form of sensuality – a search for *extraordinary* sexual excitement. To the

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[407] It is hard enough for human beings to contend with the difficulties nature sets in their paths; it is silly to add to these obstacles artificial difficulties that are easily dispensed with. Wisdom would recommend avoiding such extraneous problems altogether.

[408] Consider for instance the story of cannibalism given in an earlier footnote. This is of course an extreme example; admittedly, not all homosexuals are cannibals. But it goes to show how weird people can get, who allow themselves to develop unnatural desires.

[409] This is well illustrated, for instance, in the Biblical story of Eve being tempted by the serpent to eat the forbidden fruit, by subtle descriptions of how “delightful” it is (Exodus 3:1-7).

pervert, ordinary pleasures are “not enough”. There is always a lust for more – not only quantitatively more, but also progressively more and more weird.

This is an existential problem, as it can lead a person into physical problems (e.g. Aids and other diseases), psychological problems (e.g. personality and identity derangement, lack of self-esteem) and social problems (e.g. social conflicts and ostracism). But such impure thought is especially a spiritual problem, since it is based on delusion, i.e. on a fundamental error of understanding. It is thus bound to lead one astray from inner peace, balance and clarity.

Once one develops and follows such inclinations, there is no limit to how far down one can slip. The descent may at first seem controlled, but eventually it becomes uncontrollable. Having repeatedly identified with stray physical or mental impulses, the soul has made its faculties of cognition, volition and valuation mere instruments in the service of such impulses, and becomes less and less able to reassert authority over them in the service of higher values.

11. Spiritual impurity

All the arguments proposed in the present essay are only incidentally addressed to practicing homosexuals. It is very unlikely that these people will be moved by reason to revise their ways. It is very doubtful that even if they did "straighten up and fly right" they would "save their souls" from the abyss that they have condemned them to. They have probably indelibly sullied themselves.

The soul is indeed eternally pure. We cannot say it is literally stained, since it cannot be *mixed with* non-spiritual substances (i.e. mind or matter), and the spiritual substance is universally one and always the same.

However, we could say the soul is irretrievably *weighed down by* negative mental and physical accretions that stick to its surface, as it were. But perhaps the most accurate description of spiritual impurity would be that the soul is so deluded by past misbehavior that *its consciousness* becomes obscured and can no longer find its way back to clarity and understanding.

Homosexuality would seem to have such a "once and for all" negative effect, without possible redemption. This does not mean homosexuals should not try to improve their conduct. They may still, through such effort, hope to somewhat better their spiritual lot, and partly redeem themselves (or at least, not to worsen their lot and fall further still). Even a little redemption is better than none.

No, this essay is not addressed to practicing homosexuals, but to virgin youths and other still-innocent souls, who under the influence of an increasingly corrupt culture may be considering taking up this misbehavior for whatever motive. It is also addressed to moral philosophers, religious leaders, medical professionals, educators, opinion makers and legislators – to enjoin them to think and act in a responsible manner.

It used to be, once upon a time, that most people had great faith in the Jewish Bible, or similarly authoritative texts in other religious traditions. It sufficed for the Torah to command *"Thou shalt not lie with mankind, as with womankind; it is abomination"* (Lev. 18:22)[410], and

[410] A related interdiction is that against transvestism, in Deut. 22:5; such practices, by men or women, are also labeled "abomination", probably because they reflect and produce mental confusion with regard to objects of sexual interest, eventually leading some people to homosexual responses and practices. As regards transsexuality (which is a hot topic nowadays, when sex change surgery seems to be easy and popular), it would appear forbidden by Judaism (and similar traditions), primarily because (in normal cases) it constitutes voluntary mutilation of natural reproductive capabilities. To this biological reason, we might add that the sexual activities of (willful) transsexuals are either effectively homosexual (since anatomical changes are superficial and do not affect the genetic makeup of

most Jews complied. This was not just fear of eventual Divine retribution, or because such behavior was legally very severely punishable[411]. It was out of a deep-seated love for ordinary dignity and decency, for a certain model of humanity[412].

Some people still today have this clear vision of what it means to be a human being. Such people do not need convincing. This essay is not addressed to them, but to those who have lost their bearings. If they have no faith in religious traditions, perchance some rational arguments will convince them. If they are envisaging indulging in homosexuality, perchance these arguments will help them check their impulse. If they have already engaged in homosexual acts, perhaps these arguments will make them cease and desist.

Some will of course rebelliously continue on their path and indeed arrogantly reassert their "right" to it. That is their problem; they will surely eventually suffer the consequences of their choice one way or another. Their willfulness, their insolence, their shamelessness, their impudence, their immodesty, will lead them astray – "sure as hell". They have no fears or regrets, now; but one day, "their teeth will clatter and they will gnash their tongues". Wait and see what they will think and feel at the time of their death.

Human nature is such that we are all capable of the most sublime virtue and spirituality, or the ultimate depths of depravity and vice. This is what it means to have freedom of the will, the power of choice. It means that the whole range of possible human conduct is *potential* to each and every individual. There is nothing wrong with having a natural potential for vice or evil – what matters ethically is whether such potential is ever *actualized* or not. Indeed, the respectability of the virtuous and good is that they had the opposite potential in them, and chose this demanding path.

Fortunately for humanity, there are and will likely always be good, decent people around, who know the honor of being human. The statistical distribution of good and evil in the world is probably in the traditional bell shape, though its spread may vary. We should not be misled, by the popularity of ugly or evil acts (at a given historical time, in a given society), into believing that human nature is inherently like that. This would just be an excuse or pretext for joining the ranks of those who lack dignity.

Humans are really, sadly, capable of great depravity. People who habitually entirely surrender to their every passing sexual impulse, eventually become crazy and desire "sex" with just about anything that crosses their path. A man will desire to penetrate almost anything, and a woman will desire to be penetrated by almost anything. They can lose all sense of dignity or decency, and have sex with dead bodies or animals – or other people of the same sex.

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individuals, so that an "ex-male" is still a male, and ditto for females) or effectively transvestite (so that if an "ex-man" has sex with a woman, or vice-versa, it is not homosexuality, but 'dressing up' not only with the wrong clothes but even with false body parts).

411 It is also written: "And if a man lie with mankind, as with womankind, both of them have committed abomination; they shall surely be put to death; their blood shall be upon them" (Lev. 20:13). The crime of sodomy was taken so seriously, death was prescribed for it.

412 If there is anything in any holy book that convinces me that it is God-inspired, that it comes *from the deepest well of truth and goodness in the human spirit*, it is the inclusion in it of laws against such lewdness. Of course, tradition *per se* is not proof; but then, nor is modernity. We could say, naturalistically, that our ancestors have learned certain lessons of life through bitter experience, and passed them on to us in the form of religious, spiritual or wisdom teachings. These teachings do not impose improbable truths on us, but rather remind us of what deep inside we already instinctively know to be true.

12. The essence of sodomy

Sensuality normally refers to desire for or pursuit of sexual pleasure. One form sensuality generally takes is to get sexual pleasure from the thought or experience of the pleasure one's partner is getting. This is a positive, and relatively normal, form of sensuality – it is the vicarious experience of pleasure. Instead of just getting pleasure, one is *getting it by giving it*. Since it is essentially benevolent, it is commonly considered a form of "making love".

But it should be noted that there is a negative parallel to this – getting sexual pleasure *from the pain* one's partner is subjected to. In this case, one is getting pleasure by giving pain. This is called **sadism**. Being essentially malevolent, it must be considered as a form of hatred; it is biologically abnormal, being motivated by destruction of other human beings. This is true, even in cases where the partner experiencing pain is a willing victim, i.e. in cases of **masochism**. Here, self-hatred and self-destructiveness are clearly involved – two obviously unhealthy dispositions.

The sadist and masochist have in common the perverse idea that pleasure is to be obtained from pain – the other's pain or one's own. In addition to such cruelty, they have in common self-contempt and self-hatred, except that: whereas the masochist directly expresses these emotions by self-victimization, the sadist expresses these emotions vicariously, by producing them in some victim instead of self.

In this perspective, it should be noted that the sex act most associated with male homosexuality, viz. sodomy, is essentially a sadist act. This is true even in cases where the man being subjected to anal intercourse is a willing partner and considers the act pleasurable (sadomasochism). Why so? Because this act is intrinsically *humiliating* to a man[413] – i.e. it unavoidably involves the psychological damage and pain of loss of manliness and loss of self-esteem.

A man who wishes to penetrate another man is thus essentially a sadist, and a man who wishes to be penetrated by another is essentially a masochist. The sadism involved is of course most evident in cases of homosexual pedophilia or male adult rape; but it is equally manifest (and so is masochism) in cases of consensual sex between adults. In all cases, such behavior (if voluntary) is psychologically unhealthy.

The sodomite aggresses the masculinity of his partner (or victim), and thus expresses some hatred of that maleness, and therefore (being male himself) some self-hatred. In thus abusing his sex partner, he reveals his own inner doubt and conflict. On the other side, the willing

[413] This is something every man still able to see within himself knows to be true. Even if some men's minds have become so obscure they can no longer see this truth, it is true.

recipient of sodomy, allowing his male nature to be downtrodden, reveals his own self-contempt. Moreover, by allowing or encouraging another man to so behave, he causes that other harm.

Thus, both participants in voluntary sodomy are guilty of misusing their partner's body, and revealing and exacerbating their own serious psychological problems. There is no way that the act of sodomy can be considered a mentally healthy choice. It is inevitably damaging to both the men involved.

Similar judgments can be made concerning other sex acts between men, and sex acts between women, to varying degrees. Apart from their immodesty, all such acts are characterized by mutual misuse of the two partners' gender, implying both hatred of the other and self-hatred. They are all therefore forms of sadomasochism, although again to varying degrees.

It is worth noting in this context the deeper motives of homosexuals who organize or participate in public parades Observe in such demonstrations: the exhibitionism, the provocative displays, the transvestism and suggestive facial expressions. The primary intent is clearly not (as it is claimed) political, a wish to be acknowledged as human beings. Rather, one sees a will to shock ordinary sensibilities, a determination to lower people's standards.

One gets the distinct impression that what homosexuals really want is to smear other people with their impurity. They wish others to be dragged willy-nilly into their warped vision of human sexuality. Nothing should be allowed to remain pure, untainted by their shit. Notice, in particular, the efforts made by homosexuals to parade in the streets of Jerusalem, and other places considered holy by many. They have no consideration for other people's values.[414]

Homosexuals need to ask themselves what the purpose of life is, for they have clearly lost all sense of direction. Is human life a desperate pursuit of queer sensations, irrespective of what the side effects of such pursuit might be? No: there is much more to life than that – namely, a wide-ranging personal and social responsibility for spiritual development.

They have to step well back from their current ways and ask themselves: What kind of entities do they want themselves and others to be? What kind of world are they busy making in their image and likeness, pulled along by their darkest impulses? People get mentally caught up in the whirlwind of their lives, and lose track of their original purity and ideals. They cannot recover these precious native virtues and values without a determined effort.[415]

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[414] Even God Himself must, in their view, be forced to love them as they are. It is not enough for them that they ignore the presence of God (Who is everywhere to some degree) in the privacy of their homes; they want to shamelessly flaunt their impurities to His face in the public arena too, and even in the most holy places (where His presence is strongest).

[415] People can make smart-aleck quips in response to such questions, but surely somewhere deep within they know what's what.

13. A social revolution

As already indicated, there has in the last few decades been a radical upheaval in social and political attitudes towards homosexuality. What was, still some fifty years ago, generally condemned, was gradually legitimatized; until today, when homosexuality seems to be not only tolerated, but even promoted.

The laws, and even constitutions, of most Western nations have been changed to grant homosexuals every right to practice their form of sexuality freely. There are laws that force employers to employ (or keep in their employ) homosexuals, however distasteful the life of other employees (who are captive audiences) may be made thereby.

Many religious institutions, including the Jewish Reform movement and the Anglican Church, have effectively legitimatized sodomy, in direct denial of their own Scriptures, by admitting "gay" rabbis or priests.

We have now reached the point where homosexuality advocates in the U.S. are trying to get schools to teach children about homosexuality. On the surface, the intention seems to be to remove all stigma from homosexuality, letting people so inclined do as they will. But *de facto*, the social machine is producing more and more homosexuals. The measures taken ostensibly "in defense of" homosexuality result in more of it than there would otherwise be – which means that they positively *spread* homosexuality.

Tragically, the propaganda and legal efforts of the proponents of homosexuality in the past generation or two have been largely successful. Very many of today's youths have been brought up to believe that defending homosexuals is a good deed. Even if many of them remain heterosexual, their tolerance level of homosexuality has clearly increased. The border between decency and indecency has gradually been shifted, so that people previously regarded as moral deviants have now become acceptable, in large segments of public opinion, the media and political forums.

The social change began as a trickle, and has lately become a tsunami. What was a rare phenomenon is fast becoming widespread. At first, there were appeals to tolerance of difference; lately, we witness the media flooded daily with reminders of homosexuality as if their goal is to make it the new social norm. Business interests can smell a lucrative thing when they see it, and have started to flaunt homosexuality in their advertising, further corrupting youth.

What was through much of our history considered manifest wrong has suddenly been declared a "human right" by some of the people in power, and inscribed as such in law books. The word "right" here used is intentionally equivocal – superficially, referring to a political and

legal condition; but additionally, suggesting that it is something morally acceptable and even good.

Future historians will shake their heads in wonder and disbelief, in the aftermath of this policy, when the destructive effects of this modern plague become apparent.

Such radical social changes have of course not occurred suddenly and by chance, but only gradually and through the intentional active involvement of very many people. This was "the gay/lesbian liberation movement".

First, more and more people, let loose by the general "sexual liberation movement" of the late Sixties and early Seventies, became homosexuals[416]. Then, many of these people took to the streets, in mass demonstrations called "gay prides". These parades shocked a large part of the public, but also served to enlist many new adherents, either to the practice of homosexuality or at least to its cause.

First, people were told to be *kind* to homosexuals, to feel pity for their difficulties and not add to them. Then, people were told to be *tolerant* towards them, to accept that they have a right to make their own choice even if others disagree with that choice. Now, people are effectively told to *shut up* – homosexuality is considered a settled issue, not open to any doubt or discussion. A new faith and dogma has been established; it is forbidden to oppose homosexuality or even make it an issue any more. It is a *fait accompli*, a done thing.

The subject is loudly declared closed, and it is heavily hinted that attempted objections may result in legal proceedings. The spin-doctors having applied the "civil liberties" notion to homosexuality, any contrary notion is made to seem illegal. Freedoms of speech and of political opposition, which are defended in all other domains as fundamental to democracy, are considered null and void when the issue of homosexuality is raised. Under a cloak of "liberalism", a new dictatorship has emerged.

Verbal expressions of disapproval of homosexuals are indignantly reproved and savagely repressed by people in positions of authority (editorialists, politicians, educators, and so forth), as if criticism of such behavior is simply inconceivable.

In this matter, exceptionally, very little moral or political discussion is tolerated by our democracies – a totalitarianism of the "politically correct" has been instituted. It is implied that just to voice disapproval of this class of people is to insult them, to belittle their human dignity. We must thus remain silent as to the indignity they bring upon themselves, and the whole human species, by their behavior.

The matter is compared to racism or anti-Semitism[417], as if a genetic subset of humankind or some new spiritual path would be under attack. That this comparison to Homos might seem like an insult to many Blacks or Jews is not considered[418]. It is pointed out that Hitler tried to

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[416] This may have occurred through a culture of unchecked heterosexual promiscuity, which in due course made way for orgies (often drug-induced), during which sexual lusts and contacts between people of the same sex could and sometimes did arise.

[417] In French, the terms Negrophobia and 'Judeophobia' are also commonly used. Note that a comparison is also sometimes made to xenophobia – the rejection of 'foreigners' – on the ground that antipathy to homosexuals is merely psychological intolerance of 'difference'; this is of course just more balderdash.

[418] Consider in particular whether any of the victims of the Holocaust would have appreciated the comparison, which is none too flattering for them.

kill off homosexuals, as well as Jews and Gypsies – the implication being that our moral standards are to be set by way of the contradiction of Hitler's[419].

Some of these arguments were formulated by homosexual activists who happened to be (sorry to say) Jewish or Black. These people cunningly[420] took over the language and arguments used in defense of Jewish and Black rights, and transposed them to homosexual "rights". The latter group was thus effectively presented to the public as just another ethnic or religious minority. They asked only to be treated fairly and without discrimination, as if what they were doing together was morally and socially totally irrelevant.

[419] The absurdity of such thinking can be seen if we apply the same logic to other categories of behavior. E.g. does the fact that Hitler had some murderers executed imply that we should henceforth legalize murder? Clearly, the antitheses of Hitler's peculiar mix of value judgments cannot be used as universal norms.

[420] And without respect for the sacred memory of victims of the Holocaust, and other such persecutions and pogroms.

14. The defenders and promoters of homosexuality

The many people who try to object to this imposed moral and social revolution are silenced by intimidation or ridicule – they are made to feel like reactionaries or retards. They are personally attacked, in order to neutralize their criticism. It is insinuated that their public opposition to homosexuality might be due to their having subconscious homosexual tendencies, which they want to deny to themselves or hide from others.

The advocates of homosexuality, on the other hand, are implied to be sexually pure, or at least honest. No one seems to question the sexual inclinations, sanity or integrity of the legislators who are forcing it down people's throats (excuse the pun). One may well wonder how these politicians were enlisted to this unjust cause – some were no doubt complicit (themselves already immoral), but surely many were amoral mercenaries (who would do anything for votes) or moral cowards (fearing popular rejection or ridicule).

Many homosexuals were, of course, themselves intellectuals, who had or acquired positions of some importance in the media, in academia, in politics, and throughout society. These people made their weight felt over time, and succeeded in changing society as they wished. Not all advocates of homosexuality were themselves practicing homosexuals or even people with homosexual tendencies, but a large portion must have been. People do not normally pursue public goals without a personal axe to grind of some sort.

I have seen an American university professor, lecturing on psychology at Geneva University, shamelessly manipulating a lecture hall full of eager students with false facts and statistics, or tendentious reading of facts and statistics, to convince them of the naturalness, normality or at least great frequency of homosexuality. I have read a "dear Abby" type newspaper column, where a youth struggling with emotions or feelings he could not fathom was effectively advised by the columnist to become a homosexual.

Slowly, slowly, through such pinpointed verbal interventions from positions of authority, society was turned around (literally).

Some advocates of homosexuality are, of course, themselves homosexuals; some have homosexual tendencies they would perhaps like to actualize. Some advocates do not advertise their homosexual orientation, or even conceal it, while others frankly admit it[421]. It is

[421] I heard recently on TV that Alfred Kinsey, who pioneered experimental "sexology" in the 1950's, was himself a homosexual. As I recall, this fact was not advertised when I read about his work in the media during the 70's. This relevant fact was cunningly concealed at the time. He was made to appear an objective, scientific researcher. Among his "findings" was a claim that (as I recall offhand) 15-20% of the U.S. population had had homosexual experiences, i.e. were either exclusive

understandable that such people would want to legitimatize their own behavior or lusts. Also, by defending homosexuality, they become personally more attractive within their peer group; and by promoting it, they produce new potential partners.

But what of the defenders of homosexuality who are not themselves homosexual in orientation. What is the motive of these people? The motive a person claims to have whether sincerely or dishonestly may not be the true, functioning motive. Are these people selflessly pursuing justice, as they pretend to be doing – or are they trying to establish a world in which their own petty sexual or other impurities are not frowned upon?

Moreover, whatever a person's alleged motive, what counts are the real consequences of his or her actions. Are these people being kind, as they imagine themselves – or are they in fact senselessly causing harm to the very people they claim to defend? It must be said that there is no justice or kindness in encouraging someone to do himself or herself some harm, or even in not discouraging such behavior.

On the surface, it may seem like a helpful and friendly thing to do, so that the person on a self-destructive path at least does not feel bad about it and goes "gaily" to his or her fate. But it is evidently more benevolent to urgently forewarn the endangered person, and even help him or her escape the danger. The mere fact of not intervening cannot be considered good, nor can the mere fact of intervening be considered bad. The motive and (more importantly) the consequences have to be looked at, before any judgment can be made.

Heterosexuals have varying attitudes towards homosexuals. Some heterosexuals easily tolerate homosexuals[422]. If the latter are of the same gender, perhaps the reason is they are not competitors with them for the favors of members of the opposite gender. If the homosexuals are of the opposite gender, their homosexuality is not necessarily repulsive to some heterosexuals; it might even be felt as an added attraction or challenge.

Some heterosexuals find homosexuals intolerable, perhaps because they do not want to be drawn in to the repugnant or depressive world of homosexuals. Such people are labeled (by the advocates of homosexuality) "homophobes". This is intended to imply that opposition to homosexuality is somehow sick, based on irrational fear or hate, reprehensible. It is presented as a mere emotional reaction, as if no rational dissent is conceivable. Some homophobes are indeed moved to verbal abuse or violent repression[423]; but most are critical in a more civilized way.

If this loaded term is to be used for all opponents of homosexuality, then all its proponents should be called "homophiles". Homophobes ought not let homophiles make them feel ashamed of their rejection of homosexuality; it is a healthy posture, of which they can feel proud. Homophiles may well accuse homophobes of prejudice and inhumanity, but they (the homophiles) are not shining moral examples or pure spiritual guides. Their coarseness of spirit is such that they love what is bad and hate what is good; they are merely apologists for immoral practices.

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homosexuals or bisexuals. Certainly, the credibility, and power to change society, of such claims would have been much reduced if Kinsey's personal inclinations were publicly known.

422 To various degrees: sometimes, with a touch of contempt; sometimes, with an amused smile; sometimes, with concerned friendliness.

423 And needless to say, such uncivil behavior is not what is being advocated here.

15. Some legal issues

From a law philosophy viewpoint, a right to practice homosexuality is very doubtful. It is conceivable that there is a right of consenting adults to behave as they will in private; certainly, such a right can be claimed for heterosexuals.

But remember the general rule that *the rights of one person or group of persons end where those of another begin*. Certainly in the case of homosexuals, many dangers to society can be adduced to limit or exclude their potential rights[424].

In recent decades, many activities traditionally judged as immoral have been declared legal in Western countries. Some notable examples:

- Some laws have been favorable to corporations, permitting them to operate industries known to be polluting, or otherwise harm the health and wellbeing of many citizens.
- In North America, though much less so in Europe, 'genetically-modified organisms' (GMO) have been allowed with hardly any research or debate concerning their long-term environmental and health effects, and without granting consumers any information or choice in the supermarket.
- The law has come to allow mass production of and commerce in pornography, morally corrupting countless people who would otherwise have remained much purer in their sexual behavior.
- Abortion on demand has become legal in many countries, despite fierce resistance by pro-life advocates. What is amazing is how the pro-choice advocates are presented by most media, in Europe at least, as moral crusaders (for "the right of women to their own bodies"), while defenders of the unborn human baby's right to life are portrayed as backward morons (with murderous tendencies, since a few of them have resorted to force). It is rarely mentioned that in the past century an estimated *one billion* abortions have been performed legally or illegally worldwide![425]

Many other examples can be given of the divide between law and morality. One particularly shocking example is the legalization of homosexuality in only the last few years.

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[424] To give a concrete example: willful transsexuality seems at first sight a private choice with no societal consequence. Yet, as such sex changes spread, men become more and more unsure as to whether the women they meet really are women, or are ex-men; and similarly, women come to doubt the real gender of the apparent men they meet. This may seem amusing anecdote, but it constitutes a further erosion of heterosexual relations.

[425] Compare this figure (a round number) to the fatalities of war during the same period. See www.johnstonsarchive.net/policy/abortion/wrjp338sd.html.

Homosexuals have certainly existed in relatively small numbers throughout history, though they were usually frowned on and often legally sanctioned. Suddenly, starting in the USA, these people have succeeded in changing the law in their favor in most Western countries. They have gained the sympathy of certain media, and become fashionable. Many youths, confusing legality with moral permissibility, have been drawn into perversions that, had they been born a few years before, they would never have even contemplated.

At first, homosexuals claimed their practices were the private concern of consenting adults (seemingly just saying: 'mind your own business'). Then they demanded the right to provocative public displays, irrespective of other people's sensibilities (which incidentally, propagated their 'values' in the population at large including children, lowering general standards and increasing their own numbers). Then they claimed legitimacy and respectability.

Now they demand the right to marriage (which involves tax advantages, i.e. public subsidies). Also, they claim the right to adopt children (thus directly transmitting their values to other human beings, who are not even consenting adults).

Thus, step-by-step, these people have sought: public tolerance, then justification and condoning, then support, then propagation. To top it all, posing as a persecuted minority, as poor victims of causeless hatred, they have managed to hijack the legislative and judicial system at its highest level, in some countries, apparently making even merely verbal opposition to their progress a constitutional or bill-of-rights crime[426], so that even ethical philosophers dare not debate the issue without wondering whether they are risking imprisonment or fines. Check mate!

Even so, it must be said that homosexuality is not a "right", exempt from all scrutiny. *No voluntary human act falls outside the scope of ethics. Nothing in ethics precludes that certain behavior patterns might be evaluated and considered reprehensible.* The role of ethics is precisely to consider the various consequences of each proposed behavior pattern, and evaluate it dispassionately, i.e. without being intimidated by social threats or pressures, with reference only to the profound needs of humanity.

On a material level, we could for example mention the factual, historical role played by homosexuals (and in particular, bisexuals) in the spread of the AIDS disease during its early years in Western countries. Consider to what extent this affected relations between heterosexuals (the majority of the population): men and women could no longer so freely have sex without condoms; and when they did have sex, the condoms they used constituted a physical separation between them. Consider also how many heterosexuals eventually contracted the disease and died (millions, no doubt), although innocent of homosexual practices.[427]

On a spiritual plane, the main traditions of mankind would all seem to agree that humans must not allow such lowly, impure impulses to develop and to propagate. Certainly, the Judaic, Christian and Moslem traditions consider such behavior improper, harmful and to be

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[426] I gather they are currently seeking recognition and protection in international charters, too. They well understand that the more legal protections they achieve, the more difficult does it become to reverse the trend.

[427] I marvel at commentators who prefer to ignore such "accidental" victims of homosexuality, so as to appear "tolerant" and "kindly" to the culprits; they surely share in the moral guilt.

interdicted[428]. The Eastern traditions do not specifically attack these practices (as far as I know – I have never seen them mentioned), but effectively disapprove of them in the larger context of control of sexual lust, and (I also suspect) they concur in view of their social mores and legal dispositions.

As regards individuals involved in such practices: the issue is not just biological, a material issue relating to a duty of reproduction; the issue is especially spiritual, and we have seen some reasons why in the present essay.

If these men or women experience certain impulses or urges in their sex organs or in other parts of their bodies or minds, it does not constitute a justification for following these feelings. They are certainly not mechanically forced to – they are humans, they have freewill, they are responsible for their own acts.

They certainly cannot reach any spiritual 'salvation' or 'liberation' if they allow themselves to be carried away by such drives, as they do. And of course, the more they yield to their impulses and urges, the more they become enslaved to and negatively affected by them.

[428] The fact that more and more clerics have of late been compromised or intimidated into advocating or allowing homosexuality does not change the clear doctrinal intent of the Scriptures.

16. A call for recovery

If we admit that the mere *desire* expressed by homosexuals is proof of some real *need* and *right*, then all ethics and law disappears. For then any other category of individual or group can come along and present felt tendencies as justifications – and indeed, this is just what is already happening!

For instances, pedophiles ("why, bonono monkeys do it!") and zoophiles ("animals are our cousins!") are starting to make claims of their own (and ominously, according to news reports, some of them are in the legal and other significant professions, note). For the time being, they are suppressed by the authorities, the media and public opinion; but if their numbers multiply sufficiently, who knows what will happen?

And once something is legalized, it is made to appear "moral" and can then be freely taught and encouraged. Any attempt to block further expansion is argued to be discriminatory. Few people seem to have the self-confidence and moral courage to resist such developments; so that ultimately, if no one reacts, it seems probable, all law will be dismissed as arbitrary imposition, and hedonism will be given free rein.

The current social trend towards more and more homosexuality was made possible by the forbearance of the "silent majority". To reverse this trend, it is necessary for people who disapprove of homosexuality to voice criticism of it, in every civilized way and at every appropriate opportunity, openly and without fear of censure.

Even in a non-democratic system, the people is ultimately responsible for the acts of its masters, assuming they could with courage oust them; all the more, in a democracy, we are all guilty of the weaknesses of our leaders if we do not speak out and reprove them.

Instead of opting for appeasement and compromise, we must demand, in the name of ordinary decency and for the sake of future generations, the progressive *de-legalization and re-criminalization* of homosexuals. The purpose of such legal recovery would not be to persecute existing homosexuals, but to prevent the further spread of homosexuality.

Homosexuals should, in a first phase, at the very least, be legally and constitutionally forbidden from adopting children. It is unthinkable that innocent orphans should be legally handed over to sexual deviants, who might abuse them, and who would in any case spiritually corrupt them.

Secondly, same-sex marriage must be banned in all jurisdictions. To allow this is to imply that society in general blesses and participates in such unions; and moreover, giving homosexuals the legal status of wedded couples or something like it constitutes financing by society of homosexual activities.

Thirdly, all public manifestations, pornography and extolment of homosexuality should be banned. If consenting adults wish to practice this form of sexuality, they ought to at least do it in private, and not flaunt their deviance in front of the public (directly or through whatever medium or forum), and particularly not in front of children.

But ultimately, it is the practice of homosexuality as such that has to be made in principle illegal again. A society that tolerates, let alone promotes, such corruption cannot expect to survive long[429]. If any lesson is to be learned from the permissiveness of the last few decades, it is that people come to think that what is "legal" is "ethical". They interpret tolerance in practice as approval in principle.

In theory, something can be unethical but still legal. We cannot expect the law to enforce all of (or even most of) ethics – this would be a formula for totalitarianism. The meaning and moral authority of ethics lies precisely in the fact that people can freely choose to follow it or not. But in practice, too many (ignorant) people confuse legal permissibility with ethical permissibility, and this observation must be taken into consideration in formulating social policies and the laws to impose them.

To declare something illegal is to mean it to be punishable in some way. If breach of the proposed ban were without material consequence, the law would not be obeyed. The threat of some sort of retribution is intended not so much to avenge, but to dissuade. At least some people would think twice before engaging in homosexuality. There is no need for a "witch hunt" – but there is need for a sign of firm resolve by society to stop such practices.

Thus, what is being advocated here is nothing less than a radical reversal of the pro-homosexual cultural and legal trends of the last few decades. Society must ask how it will turn out if it continues to yield in the face of the current homosexual assault. The public must react responsibly, and with determination recover its collective lost sanity and strength. There is good reason to be intransigent.

Society is morally responsible for the directions it takes. When we consider the impact of legalization of homosexuality, especially its propagation to people who would otherwise not even think of it, it is clear that we have a disastrous spiritual failing on the part of society as a whole, a criminal moral abdication of too many of its cultural and political leaders, lawmakers and judges.

Instead of protecting the pure and innocent, they encourage further corruption. The present words are clearly not a call for violent repression, but for rational reflection on ways and means to legally prevent further spiritual and social disintegration. Laws and amendments *can* be passed, which forbid and suppress certain practices; there is nothing immoral about such legislative measures.

To actively seek such social and legal reform is *to exercise our democratic right and duty to determine the shape of society*. Some people might be threatened with legal retribution, under some current laws, for such activism; but reflect that in no democratic régime is it truly illegal to call and work for changes in the law.

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429 Consider ancient Rome and other historical examples.

17. (Annex) The Rabbis must ban homosexuals from Judaism

This is an appeal to Jewish religious authorities (orthodox or traditional, at least) for more decisive action against the spread of homosexuality in this day and age.

The rabbis ought to impose a ***cherem*** (ban, excommunication, anathema) on homosexuals[430], and even on 'homophiles' (supporters of homosexuality), so as to stop the growing social plague of homosexuality from spreading further. If necessary, the rabbis should institute a *takana* (a corrective decree) to that effect.

Modern homosexual activists have a societal project, call it 'the homosexual society'. In this society, homosexuals will kiss in public and get married; they will adopt and raise children, and maybe someday have genetically engineered children of their own; the state will force employers and employees to accept them and even honor them; homosexuality will be explained and even praised in schools from an early age; homosexuals will be openly displayed and made attractive in the media; and so forth.[431]

This shocking state of affairs already exists to various degrees in many Western countries today, including Israel.

If we refer only to the Torah, homosexuality would seem (though labeled an abomination and in principle punishable by death [Lev. 20:13]) like only a private sin that each *individual* will have to account for before God. Currently, most rabbis treat the matter as such, without really reflecting on the implications of such a limited position.

But the current growing extent of this perversion in the population, and the danger of its infecting more and more people due to the aggressiveness of propaganda and activism in its favor make it a *collective* problem of previously (in past generations) unimagined proportions, a social disease. Each homosexual taken singly may be of little moment to anyone but himself or herself; but when their numbers increase sufficiently, they become a serious social danger.

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430 This term refers to all people who engage in sexual intercourse with partners of the same sex. With the possible exception of hermaphrodites and people whose genotype and phenotype do not match (estimated as 50-100 individuals per million population), who have to be considered on a case by case basis in all fairness; in such cases, the status of their sexual partners is also to be examined specifically.

431 This societal project is perhaps part of a larger one, call that 'the sexual society'. In that society, there would as it were be a permanent mass orgy. Sexual relations would be the main form of interaction between men and women, men and men, women and women, adults and children, and even humans and animals. The model for that social 'ideal' is the porno movie, where people are constantly either masturbating or having sex with someone or something.

Not only are the homosexuals themselves guilty of this greater social sin, but all the spiritual leaders, educators, journalists, politicians, judges, policemen, entertainers, etc., who either support or defend homosexuality in some way, or merely refrain from denouncing and opposing it, are also guilty of this mega-sin. Tolerance or advocacy of evil is immorality disguised as morality.

It is absurd and timid in this context to argue (as some do) that 'the sin' (homosexuality) is to be hated, but not 'the sinners' (homosexuals and homophiles). In the *Amida* prayer, the blessing *lamalchinim* ends with a clear condemnation of the sinners, and not merely of the sin in abstraction. Life is a test, and there are prices to pay for misdeeds. Modern "political correctness" is not a virtue according to normative Judaism, but an unforgivable breach of duty to truth and justice.

Reform and conservative "rabbis" who practice, support or merely allow homosexuality should be the first to be exposed and condemned, as extreme and dangerous heretics. Normative Judaism will lose its moral authority if it remains silent and passive in the face of this latest assault on Jewish and human morality. Better to exclude than include such evil people; better to be few and pure than many and defiled.

Other religions should do the same, by the way, and energetically exclude and damn all voluntary homosexuals and homophiles. Such people should not be allowed to think they will get away with their crimes against humanity. Only in this way will this developing madness be stopped in its tracks.

Orthodox rabbis must wake up to the spiritually and socially criminal intentions of homosexuals and homophiles and fight them seriously. Till now they have responded far too mildly, uncertain how to react to the current onslaught on traditional values. Due to political naivety, they have failed in their obligation of leadership in defense of public morality.

The apologists of homosexuality have apparently managed to convince some naïve rabbis that homosexual behavior may be a mental sickness or a genetic compulsion, so that homosexuals ought to be pitied and helped rather than disapproved of and rejected. Yet the claims of mental sickness or physical difference have no scientific basis. And anyway, nowadays homosexuals prefer to be considered "normal" than to be excused (and thus humiliated) as abnormal or subnormal.

Moreover, the Torah makes clear that homosexuality is voluntary transgression; otherwise, it would not decree the severest punishment for it, universally and unconditionally. It is immoral behavior for which the perpetrators are personally responsible. They have no one and nothing to blame for it but themselves.

The Torah death sentence for homosexuality concerned males only, according to Jewish law (*halakhah*). I am not sure whether this is taken as a sentence to be executed by G-d or by the rabbinical courts. In any case, the present appeal is not intended to advocate a restoration of such executions, if they ever occurred in history. The rabbis have no such powers today, in Israel or elsewhere, and I am not concerned with that issue.

The point made here is that we can learn a lesson from the severity of the Torah sentence. Death is permanent expulsion from this world; instead of that, we can at least expel Jews who so transgress from Jewish society. The latter is a lesser sentence, but the next best thing.

Moreover, ostracism can consistently be applied to female as well as male homosexuals, and to the non-homosexual advocates of homosexuality.

In the modern world, equality between men and women is very important; people would not consider uneven treatment of them as just. Note that the rabbis consider female homosexuality as also indecent, though to a lesser degree[432]. However, the ban proposed here is not intended as a punishment for like sins; it is intended as a political act to prevent further infection in the population, an act of social hygiene[433].

The Torah does not justify a relatively mild response to this sin; it does not, for instance, provide for any cleansing ritual or temple sacrifice relative to it. No regrets will erase such past misdeeds; all repentance can do here is resolve not to repeat them in the present or future.

Therefore, the rabbis should harbor no doubt as to the appropriateness and justness of a strong, uncompromising anti-homosexual stance. A weak response, on 'humanitarian' pretext, will simply not do the job. It will only sully Judaism and the credibility of the rabbis, by seeming to condone such behavior.

Note that such a ban is not inhumane by modern standards. It does not imply the people concerned to be non-human – it merely denies them the right to call themselves Jews anymore, and to enjoy the privileges this designation implies. It is not discriminative in general terms – it merely expresses the right of any religious group to choose its spiritual companions.

If you try to show tolerance to actual homosexuals in the hope of reforming them, you will merely encourage potential ones. A kindly, 'liberal' attitude in this matter will not save many souls; it will rather cause many more souls to be lost, for people will not take the interdiction seriously. Many Jews have already been irreparably soiled, and are spiritually as good as dead. Forget them, they are lost forever: rather, think of those who have not yet been soiled. And the matter is urgent.

For years, Jewish spiritual leaders have allowed the problem of homosexuality to develop in society at large, without ever preaching against it in synagogues or visibly making any other effort to combat it. They have of course been hoping the problem would somehow go away by itself, but it is evidently getting bigger. It is admittedly not clear just what they could do about it, since the large majority of Jews who transgress in this manner never go to the synagogue or come under rabbinical influence anyway.

The rabbis willingly talk about keeping the Sabbath or not eating pork, but understandably hesitate in the name of modesty (*tsniut*) to lecture publicly on decent sexual behavior. The problem is that such virtuous silence has given the public an impression that homosexuality is not a really big issue in their eyes – or that the forces of evil at work are too strong for them to challenge. In any case, 'preaching to the converted' cannot solve the problem at hand.

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432 In my essay *No to Sodom*, I also admit (on more naturalistic grounds) female homosexual acts to be somewhat less immoral than sodomy between males.

433 According to one estimate (see Jpost.com, 3 Jan. 2008), there are some 18'000 same-sex couples in Israel; that is 36,000 people! Suppose as many again are homosexuals not in couples, and a proportionate number of people of Jewish origin to be homosexual outside Israel (especially in the U.S., I imagine). Then we may guess at a *world total* of some 100,000 individuals. This is an epidemic, a veritable disaster for the Jewish people. The purpose of a ban would be to remove the bad apples from the Jewish barrel, or cull the sick sheep from the flock, before they infect more individuals. This is the prophylactic way, used in gardening, husbandry and medicine.

What is needed is a strong statement that will reach the general public. The proposed ban is just such a statement. It will and should *scandalize* all conventionally minded people, who have been trained by the media to consider homosexuality as normal and its defense as good. They will accuse the rabbis of extremism and similar epithets, to intimidate them into submission. Many Jews, too, will object and fear, demanding the rabbis keep a low profile in this matter. But some young people out there will surely get the message and be saved from following this decadent fashion.

Dear rabbis, people who are truly spiritually pure ought have no fear of evil. Consider that nowadays homosexuals are organizing lewd street marches in Israel, even in Jerusalem. This serves to legitimatize homosexuality and make it fashionable, and thus spreads it. Some rabbis have verbally objected, or even recommended counter demonstrations, but such tepid measures are clearly far from sufficient to stop the trend; much more punch is required to down this monster. Take a firm stand and act decisively.

Homosexuals are cunningly using all the tools provided them by a simplistic and fallacious interpretation of democracy to further their subversive cause. They are an educated and wealthy lobby group, numerous and influential enough to affect national legislatures and international bodies. Judging by their successes in North America and Europe, they will very soon manage to obtain in Israel all the legal freedom they desire to corrupt many, many young Jews. Do not be surprised if, moreover, they in time demand that the Torah's anti-homosexual verses be censored.

But there is one, just one, way to stop these loathsome people from progressing further, in the Jewish world at least. It is that all rabbinical authorities in Israel (and indeed, in the world) convene and together declare all evident homosexuals and homophiles to be *no longer Jewish*. Only such a powerful ban can put the fear of G-d in some of these people's hearts, and only the leading rabbis (the orthodox and traditional ones, at least) have the institutional and moral power to do it.

The terms 'Jewish' and 'homosexual' must be understood by everyone to be antitheses, contradictory terms. There can be no such thing as a "Jewish homosexual": such a concept is shameful to all decent Jews. Normal Jews do not want to be associated with homosexuals, even in thought. Such behavior is the depth of depravity, something incompatible with Judaism. Let it be known far and wide: if you are a Jew, you cannot be a homosexual; and if you are a homosexual, you cannot be a Jew.

If someone publicly acknowledges being a homosexual in the media, or admits to being a homosexual in front of two or more witnesses, then that person should be formally banned from the Jewish religion (for examples: Dana Olmert, the current PM's daughter, and various reform and conservative so-called "rabbis").

If, moreover, someone by word or deed publicly takes a stand in favor of homosexuality or homosexual "rights", then that person should likewise be declared excluded from the Jewish religion (for examples: certain judges of the Supreme Court of Israel, certain Members of the Knesset, certain academics and journalists).

What does excommunication mean? If it is a man, he will no longer be counted as part of a *minyan* or be called up to the Torah, or granted any of the duties and privileges normally granted to Jews. If it is a woman, any children she bears thenceforth will not be recognized as

Jews. Moreover, such people should not be allowed in Yom Kippur services or be buried in Jewish cemeteries.

Such exclusions may be difficult to administrate and enforce in practice, but the theoretical message they convey is important and effective anyway. A rabbinical court would have to decide each case, and a centralized blacklist would have to be maintained.

Some people inevitably object: what of *teshuvah* (repentance)? If the rabbis consider ex-homosexuals redeemable (though I do not see on what basis they would), then if after being expelled from Judaism such people sincerely want to return, they would have to go through *halakhic* conversion like any other non-Jew. Most of the people concerned don't care about their Jewish identity anyway; but some may think twice and change their ways.

Note that secular governments can legally do nothing whatsoever to prevent religious authorities from excluding whomsoever they choose to exclude from their religion. A religion is like a private club, in principle free to choose its own members. Of course, a government can withhold much needed funding, and use similar means of pressure, or even persecute and imprison people on whatever pretext; but then the rabbis must decide what counts most for them.

The rabbis cannot remain passive; they must do something; that is their job. Excommunication is the one power tool the rabbis have at their immediate disposal, if they are really serious in their opposition to homosexuality. Only by such radical and forceful measures can the tide be stemmed. If our spiritual leaders do not show the necessary courage and determination, they will truly have failed in their ministry; and the world will get still more confused, dark and ugly.

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	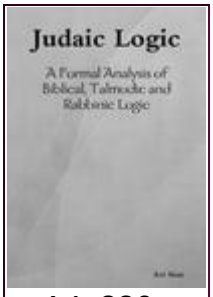	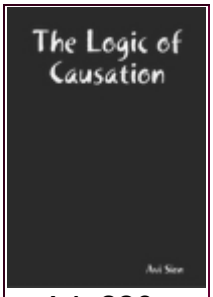	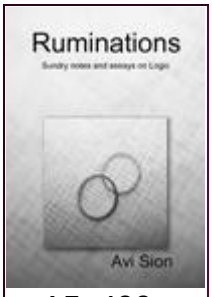	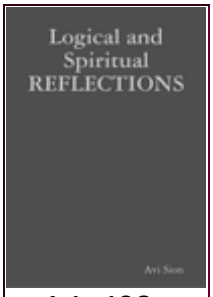
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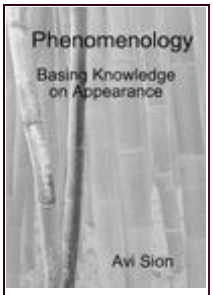	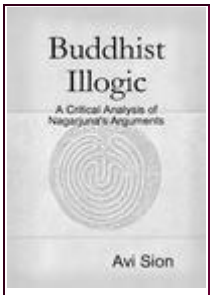		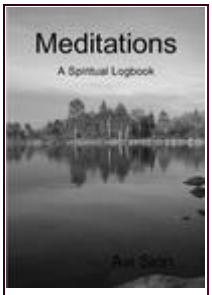	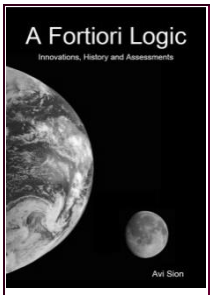
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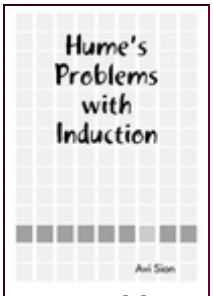	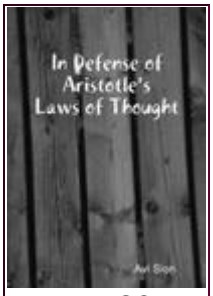		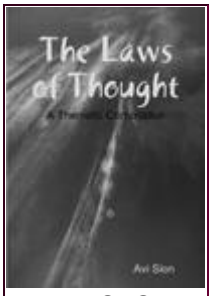	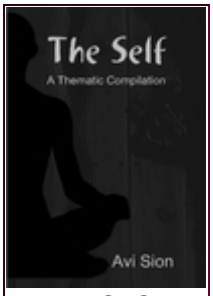
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	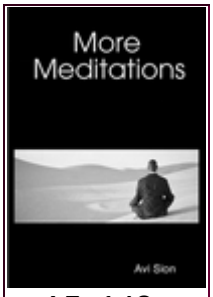	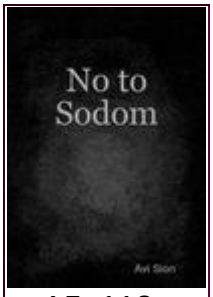	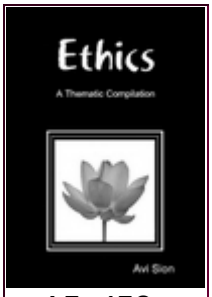	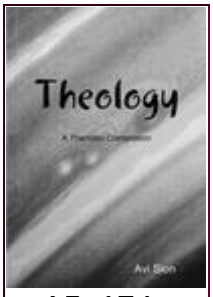
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