THE LAWS OF THOUGHT

A Thematic Compilation

By **Avi Sion** PH.D.

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The Laws of Thought can be freely read online at avisionlawsofthought and in various other locations.
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The present document contains **excerpts** from this book, namely: The Abstract; the Contents; and Sample text (Chapters 19 and 20).

Avi Sion (Ph.D. Philosophy) is a researcher and writer in logic, philosophy, and spirituality. He has, since 1990, published original writings on the theory and practice of inductive and deductive logic, phenomenology, epistemology, aetiology, psychology, meditation, ethics, and much more. Over a period of some 28 years, he has published 27 books. He resides in Geneva, Switzerland.

It is very difficult to briefly summarize Avi Sion's philosophy, because it is so wide-ranging. He has labeled it '**Logical Philosophy**', because it is firmly grounded in formal logic, inductive as well as deductive. This original philosophy is dedicated to demonstrating the efficacy of human reason by detailing its actual means; and to show that the epistemological and ethical skepticism which has been increasingly fashionable and destructive since the Enlightenment was (contrary to appearances) quite illogical – the product of ignorant, incompetent and dishonest thinking.

Abstract

The Laws of Thought is an exploration of the deductive and inductive foundations of rational thought. The author here clarifies and defends Aristotle's Three Laws of Thought, called the Laws of Identity, Non-contradiction and Exclusion of the Middle – and introduces two more, which are implicit in and crucial to them: the Fourth Law of Thought, called the Principle of Induction, and the Fifth Law of Thought, called the Principle of Deduction.

This book is a thematic compilation drawn from past works by the author over a period of twenty-three years.

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1. Briefly Put

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[1]:

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 upon

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[1] 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).

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.

2. Antagonism to the Laws

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.

3. Counterarguments

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.

4. Our Pedestrian Path

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)[2]. 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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[2] 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.[3]

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.

Chapter Twenty

1. 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[4], 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

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[3] 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.

[4] See especially my *Ruminations*, chapter 9 ("About Negation").

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.

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.

2. The Need for a Subject

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.

3. 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.[5]

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

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[5] 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.

dream world, X and not X *can* apparently both coexist without infringing the law of non-contradiction. Distinctions disappear; opposites fuse into each other.

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:

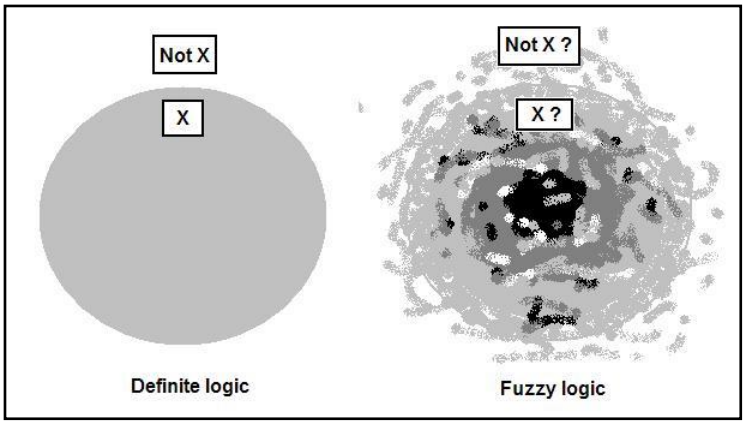

Diagram 20.1 Definite and indefinite terminology.

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.

4. Stick to Logic

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.