

Chapter 2 The Unseen: Noumena

1. Speculation

Epistemologically, for people having no actual experience of divine revelation every religious doctrine is speculation in regard to what the doctrine holds-to-be-true about deities, other supernatural entities, and miraculous events. By "holding-to-be-true" I mean the conscious reference of a determinant judgment to one's state of general understanding of the manner in which the judgment is regarded as being true. Critical epistemology teaches that every thing is *real* in some contexts, *unreal* in other contexts, and *non-real* (left unresolved) in still other contexts. For example, the ghost of Hamlet's father is real in the context of him being a character in Shakespeare's play; he is unreal in the context of being an actual spirit haunting a castle in Denmark; and he is non-real in the context of mathematics (which doesn't mention him or anything like him at all). The statement, "the ghost of Hamlet's father exists," is held-to-be-true in the first context, held-to-be-false in the second, and not-held-to-be-either-true-or-false in the third.

Theology centrally focuses on teachings concerning supernatural entities: God, angels, demons, heaven, hell, and so on. Precisely because these entities are supernatural, all of its pronouncements are speculative so far as what an individual can actually-know-without-doubt is concerned. If you hold something to be true even though you are conscious that it could possibly be false, this holding-to-be-true is called *faith*. Faith is a part of the phenomenon of being-a-human-being and it is central to religion. It is therefore very important to understand the human-nature of faith from the standpoint of epistemology if one is to understand how to deal with the great many mysteries every religion encounters. If your religion commands you to have faith in something, it is important for you to understand what it is demanding of you and if you can do it. Understanding faith begins with understanding the human-nature of speculation.

Speculation is conceptualization by means of employing one's capacity for productive imagination [Wells (2006), chap. 8]. Of all the creatures inhabiting the earth, the only ones we know of *beyond a reasonable doubt* who possess this capacity are human beings. It *might* be true that some animals – e.g., dogs, cats, gorillas – also possess this capacity, but here there is room for much reasonable doubt it is so. The human ability to speculate necessarily requires a capacity to imagine because every speculation is a conceptualization *a priori*¹ of objects or relationships.

The human capacity for productive imagination underlies what Kant called the "fictive faculty" (*facultas imaginandi*) of human beings. It is a capacity for representation in intuition insofar as this capacity is not bound to established time-determinations. The term refers to the capacity for the process of judgmentation to employ imagination in representing objects that have never been presented through receptivity of the senses. Thus fictive faculty is a capacity for the *productive* employment of imagination [Kant (c. 1790-91) 28: 585].

Kant distinguished between two different ways of employing the fictive faculty. The first he called Imagination (capitalized), i.e., the purposive employment of the power of productive imagination in reasoning and judgmentation. Speculation arises from this kind of employment. The second he called Fantasy, i.e., the employment of productive imagination in free-play with determining judgment without

¹ The term "*a priori*" means nothing more and nothing less than "prior to experience." That human beings can form concepts of objects *a priori* is nothing more and nothing less than a basic fact of the nature of being-a-human-being. For example, I'll wager you have no difficulty conceptualizing that you have a great-great-great-great-great-great-grandfather even though you never met him and might not even know what his name was. I'll even be so bold as to predict you have *no doubt* that this is true. You can even offer an apodictic proof it is true. It goes like this: "I have a father; my father had a father (my grandfather); my grandfather had a father (my great-grandfather); &etc." This sort of reasoning is called a "mathematical induction," and when the starting premise ("I have a father") is true then the consequences of the induction process are also true providing you leave no gaps (a "hiatus") and make no leaps (a "saltus") in your line of reasoning. Your knowledge of the existence of your ancestor is knowledge *a priori*.

purposive guidance from an idea of a purpose. In both cases these mental acts are synthesized in what is called "the motivational dynamic of practical reasoning" [Wells (2012), chap. 7, pp. 228-230], [Wells (2006), chap. 19].

Theologies are products of the first way of employing the fictive faculty. Lest you are tempted to too-hastily conclude that this statement is a derogatory remark about theology, let me add that *mathematics – all of it* – is likewise the product of Imagination in the employment of the fictive faculty. All objects of pure mathematics – without exception – are supersensible objects, and this means none of them have ever been or will ever be presented to us through the receptivity of the senses².

The case for animal imagination is found in reports (most of them anecdotal) of some animals who appear to exhibit an ability to pretend. One famous example is Koko the gorilla [Goldman (2013)]. The details of these reports are such as to reasonably imply that this putative capacity for animal imagination has similarities to the pretend behaviors of very young human children. However, these reports have also been criticized by a number of other scientists who dispute the findings.

Imagination in young children is a capacity that has been researched by developmental psychologists. Childish pretending involves concepts already learned by the child which are merely transposed to other concrete objects. An example would be the observations made on a child who pretended that some marbles were bird eggs and a recess in the arm of a chair was a bird nest [Piaget (1932), pp. 29-33]. Examples of imaginative behavior during child's play are examples of a capacity for *reproductive* imagination rather than *productive* imagination. Reproductive imagination appears quite early in childhood and is a lesser capacity than productive imagination. The human capacity for *productive* imagination appears later in a child's development [Piaget (1983), vol. I, pp. 3-7].

The observed animal behaviors seeming to imply some animals have a capacity for imagination might be explainable in terms of a capacity for reproductive imagination but fall short of implying productive imagination, and it is the latter involved in acts of speculating. We know human beings can speculate. We do not know animals *cannot* but there is no present evidence for concluding that they *can*. Speculation seems to be an ability only human beings demonstrate as far as we presently know.

Concepts of supersensible objects are called **ideas**. Not all ideas can properly be called speculations. An example of a non-speculative idea is the idea of a "bird." What is a "bird"? Most of us most of the time recognize a bird when we see one. But can you *define* what a bird is? This is trickier than you might think. If you say, "a bird is an animal that flies," then what about a bat? What about an ostrich? If you say, "a bird is an animal with feathers," this definition would work for animals that exist today but not for some extinct animals such as feathered dinosaurs. Perhaps then you could try, "a bird is a non-extinct animal with feathers." In that case, what about the dodo and the passenger pigeon? It just isn't as easy to define the concept of a "bird" as most of us think it is. The dictionary resorts to "a warm-blooded animal covered with feathers with forelimbs modified to be wings"; this worked when we thought dinosaurs were all cold-blooded, but paleontologists no longer think all dinosaurs were cold-blooded. Presently we find ourselves forced say something like "a bird is a feathered animal that isn't a dinosaur." It's an uneasy sort of definition that's true today; but tomorrow we might discover it *isn't* sufficiently true. Kant would say we can *explain by exposition* what a "bird" is but we cannot *define* what a bird is [Kant (1800) 9: 141].

The concept "bird" is an *abstract* concept we use to *classify* particular things which share some common features or attributes but which also differ from one another. The abstract concept has these differences removed (leaves them out of the concept) and retains what is common among the objects subsumed under

² We *communicate* mathematical ideas to each other through the use of symbols and, of course, a mathematical symbol is sensible. But the mathematical *object* it symbolizes is not. We can represent a mathematical point symbolically by making a dot on a piece of paper, but a mathematical point *per se* is "that which has no part" [Euclid's *Elements*]. When we *think* of a mathematical point *as* an object *per se*, we think of it as a kind of tiny little ball that wouldn't exist at all if it got any smaller. A "point *per se*" is a supersensible object.

it. All robins are birds but not all birds are robins. The concept of a "bird" is in point of fact an *empirical* concept but no one is likely to call it a speculative concept. You have never had and never will have a direct sensible experience of a "bird"; you have had sensible experiences with animals that are *classified* as birds. It is perhaps a subtle distinction, but it is an important one epistemologically. The idea of a "bird" is what we might call a "semi-mathematical" concept because the idea of an object used to classify other objects is what mathematicians call the idea of an "equivalence relation on a set." I call it a "semi-mathematical" idea because the objects it classifies are sensible objects of empirical nature but what the idea of a "bird" *does* in practical *application* is establish a mathematical relationship ("the set of animals that are birds"). It is an example of what in this treatise is called a **principal quantity of mathematics**. On one side of it we have empirical relationships in sensible nature; on the other side we have even more abstract ideas making no direct connection to any objects of sensible nature at all. The latter are called **secondary quantities of mathematics** and they are ideas belonging entirely to *pure* mathematics.

Principal quantities and secondary quantities of mathematics are concepts of supersensible objects (i.e., they are ideas). Their objects when regarded as objects *per se* are called *noumena* (the plural of the word *noumenon*). The noumenon of a principal quantity stands at the boundary between objects of sensible nature (what will here be called "the real world") and supersensible objects of secondary quantities that lie beyond the horizon of possible sensuous experience (what will here be called "the mathematical world"). This "two worlds picture" is *not* what philosophers like to call "dualism" because these "two worlds" are in fact united *in* one thing: the human being who conceptualizes *all* the objects in both of them. As old Protagoras said: Man is the measure of all things³. Understanding these two kinds of noumena is quite important for understanding faith and theology, so let us spend a little time with this topic.

2. Two-Worlds Dimensioning

The terms principal quantity and secondary quantity are owed to Dr. David Slepian, who introduced them in 1974 on the occasion of his Shannon Lecture at Notre Dame [Slepian (1974)]. In his lecture, Slepian employed a "two worlds" model but he was certainly not the first scholar to do so.

We do not know when human beings first began to make two-world speculations. For primitive natural religions it is often problematic to say the followers really make any two-world distinctions because "supernatural" does not seem to be one of their concepts. "Spirits" are mostly spoken of in manners that seem to suggest they are viewed as just another part of "the" world. Spirits of the dead are often said to reside in special places "in" the world (e.g. the hidden realm of Hades; the sky; sacred mountains; rivers; and so on). Elaborate myths are often woven with themes of these sorts. In the touchingly simple religion of the BaMbuti – which might perhaps be a surviving example of the earliest religions – we find a common sense dispensing with elaborate mythology altogether. Turnbull writes,

[Moke] told me how all Pygmies have different names for their god, but how they all know that it is really the same one. Just what it is, of course, they don't know, and that is why the name really does not matter very much. "How can we know?" he asked. "We can't see him; perhaps only when we die will we know and then we can't tell anyone. So how can we say what he is like or what his name is? But he must be good to give us so many things. He must be of the forest. So when we sing, we sing to the forest."

The complete faith of the Pygmies in the goodness of their forest world is perhaps best expressed in one of their great molimo songs, one of the songs that is sung fully only when someone has died. At no time do their songs ask for this or that to be done . . . All that is needful is to awake the forest and everything will come right. But suppose it does not, suppose that someone dies, then what? Then the

³ In philosophy, dualism – and all the problems arising in it – is the product of *ontology-centered* metaphysics. An ontology-centered "way in which one looks at the world" is quite a different outlook than that of an epistemology-centered metaphysic. The Critical Philosophy is raised up from an epistemology-centered metaphysic.

men sit around their evening fire, as I had been doing with them for the past month, and they sing songs of devotion, songs of praise, to wake up the forest and rejoice it, to make it happy again. Of the disaster that has befallen them they sing, in this one great song, "There is darkness all around us; but if darkness *is*, and the darkness is of the forest, then the darkness must be good." [Turnbull (1962), pp. 92-93]

In contrast, the religions of Bantu and Sudanic villagers living nearby employ elaborate rituals, rites, ceremonies, and other features typically found in the "civilized" religions of people whose cultures have also developed some hierarchy of authorities and governance agents⁴. These villagers frequently have contact with the BaMbuti, who regard their rites, rituals and ceremonies with amusement, boredom, or annoyance. By and large, the BaMbuti regard their "civilized" neighbors as silly people.

Formal rationalized two-world speculations for which we have firm documentation seem to first appear in the philosophizing of the ancient Greeks at the end of the 6th and beginning of the 5th centuries BC. The time period is contemporary, or nearly contemporary, with the timeframe in which scholars think the Torah was being written down. In Genesis we clearly see evidence of *informal* two-world speculation:

In the beginning God created the heaven and the earth. Now the earth was unformed and void, and darkness was upon the face of the deep; and the spirit of God hovered over the face of the waters. . . . And God said, 'Let there be a firmament in the midst of the waters, and let it divide the waters from the waters.' And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament; and it was so. And God called the firmament Heaven. And there was evening and there was morning, a second day. [Torah (date uncertain), Genesis 1:1-8]

Needless to say, there are great differences between the Abrahamic religions⁵ and the pre-Socratic Greek philosophers in the details of their two-world speculations. There is very little room to doubt that for the ancients the account presented in Genesis was firmly rooted in older naturalist religions. Christianity did not take on what one might call a more "mathematical" picture of Heaven until the theology of Augustine of Hippo (St. Augustine, AD 354-430), especially *Confessions* [Augustine (c. 397-400, books XI-XII)]. There Augustine's theology takes on a startlingly Kant-like character in some of its aspects.

On the other hand, ancient Greek philosophers of the Eleatic school had a more obviously mathematical bent that ultimately reached its pinnacle with Plato's theory of "forms." The earlier Pythagoreans almost certainly influenced this school, although how much is debatable. An explicit two-world theory first appears unambiguously in the philosophy of Parmenides (c. 515-450 BC) [Marías (1967), pp. 15-24]. It is worth taking a little time to summarize the Greek two-world views because most people are not acquainted with the ideas of the Greek philosophers or that these ideas still linger on in today's thinking.

Parmenides speculated that every thing that actually does exist exists because it possesses something he called the *ov* (pronounced *ón*). The word "ontology" is derived from this. His idea is notoriously difficult to accurately express in English. In the modern Greek language *ov* is translated as "being, creature" but, of course, Parmenides spoke and wrote in an ancient dialect of Greek. Marías translates *ov* as "the Entity"; Zeller chose to translate it as "Being" [Zeller (1883), pp. 49-52]. Of this latter translation, the philosophizing physicist Henry Margenau somewhat sarcastically wrote,

[Let] us take the word *being* in its literal sense and withhold from it the mystifying and ominous

⁴ The BaMbuti have no agency of government – no chief, no shaman, no headman, no council, no judges, no law-givers – at all. They are a pristine example of a pure consensus democracy. BaMbuti take no votes, have no elections. Instead they discuss and argue out every issue until they find a decision or course of action that everyone gives consent to. BaMbuti debates do not so much conclude as peter out [Turnbull (1962), pp. 109-125].

⁵ Islam and Christianity both accept the Genesis creation story. The Quran merely references it [Quran 41: 9-12] and Christianity incorporates Genesis as one of the books of the Bible.

qualities of its Greek counterpart. We then perceive it to be an auxiliary verb, rather bare of meaning, a verb inflated into a most independent noun. To be *something* is usually comprehensible and definite – but, to be? Perhaps it was in answer to this query that Lewis Carroll invented the grin of Alice's vanished cat. [Margenau (1977), pg. 4]

Parmenides gave birth to ontology-centered metaphysics, and ambiguities clinging to how to understand the *ov* have given it trouble ever since. Most philosophers over the course of history have chosen to translate Parmenides' *ov* as "being"; indeed, some tell us ontology is "the study of what exists" while others tell us ontology is "the study of being *as* being" – employing Margenau's "most independent noun." Still others describe ontology as "the study of the nature of being" – again elevating "being" to "a most independent noun." All ontology-centered metaphysics either implicitly or explicitly use "being" in the context that "being" is a primordial *something* – a substantial object or mysterious "God particle" or monad. While studying the *ov*, you could scarcely be blamed if you thought of a line from the Torah,

And God said unto Moses: I AM THAT I AM; and he said: 'Thus shall you say to the children of Israel: I AM has sent me onto you.' [Exodus 3:14]

Ultimately, Parmenides' *ov* is as mysterious as Lao Tzu's Tao. We can perhaps gain as much of an insight to it as we need for this treatise from Zeller's discussion of it:

[Parmenides] understood by Being not the abstract concept of pure being but the "full", the space-filling mass without any further specification; Not-Being is simply empty space (this was part of the Pythagorean doctrine). "Only Being is, Not-Being is not and cannot be thought" . . . From this fundamental idea he derived all his dogmas on the nature of Being. Being cannot have a beginning or cease to be; for it cannot be created from Not-Being or reduced to Not-Being; it was never and never will be, but is now, continuous, and undivided . . . It is indivisible since it is everywhere the same, and there is nothing by which it could be divided. It is motionless and unchangeable, everywhere similar to itself, comparable to a rounded sphere with equal expansion on all sides of its center. Thought is not different from Being for it is only thought of Being. The only perception which is true is that which shows us in everything an unchanging Being, namely Reason . . . the senses, on the other hand, which present to us a manifold of things, creation, destruction, and change – that is, a being of Not-Being – are the cause of all error. [Zeller (1883), pp. 49-50]

Marías has a similar – and equally opaque – description of what is predicated of the *ov* [Marías (1967), pg. 22]. I will leave it for you to decide whether these descriptions of the *ov* are any more comprehensible than the earlier quote from Lao Tzu in chapter 1, *viz.*,

The Tao that can be told is not the eternal Tao.
The name that can be named is not the eternal name.
The nameless is the beginning of heaven and earth.
The named is the mother of ten thousand things.

"Being" and "Not-Being" do not comprise Parmenides' "two worlds" dimensioning. That dimensioning consists of what we can call "the world of the *ov*" and "the world of things." The world of the *ov* is super-sensible. Knowledge of it can only be sought through pure reasoning – what Parmenides called "the way of what is and what could not possibly *not* be." This is "the way of truth." The world of things, on the other hand, is the world of sensory perception. This is the world of "the opinions of mortals." Parmenides tells us opinion is "the way of 'what is *and* is not'." The conjunction is important here because Not-Being "is not and cannot be thought." Yet man thinks he can distinguish Not-Being from Being. His opinion of "what is not" is, however, a predication of "something that is Not-Being" and, therefore must be held-to-be erroneous. Parmenides called the way of opinion "the way of *dóxa* (δόξα)." Marías explains what he meant by this in the following way:

1. *Dóxa* relies on worldly information, information based on *things*. This way is *manifold* and *capable of changing*. The things are green, red, hard, cold, water, air, and so on. Moreover, the things transform themselves from one thing to another and are in a constant state of flux. However –

2. *Dóxa* understands this motion, this change, as a coming to be, and this is where it is wrong. Being is not discovered by the senses but by [the mind]. And *dóxa*, which moves in the realm of sensory perception, which is what it possesses, jumps directly to being without the benefit of [mind], which it lacks. This is why it is unreliable.

3. *Dóxa*, besides being opinion, is *of mortals*. This is because its organ is sensory perception . . . sensory perception is composed of opposites and therefore is mortal, perishable, just as things themselves are. [Marías (1967), pp. 22-23]

Plato took detailed issue with Parmenides' theory (so did Aristotle). Plato also came up with a "two worlds" model but his differed in a fundamental way. His two worlds are "the world of the senses" ("apparent reality") and "the world of the mind" ("true reality") [Marías (1967), pp. 48-51]. Plato tends to dismiss the former as a world of shadows of real things and devotes his principal attention to the latter, which is a world of mathematics and reasoning. His famous doctrine of the Platonic Ideas is focused on this world. For Plato, the Platonic Ideas are held-to-be in some way more "real" than the empirical world of the senses – a speculation Aristotle strongly disagreed with.

A key point I wish to stress here is that of his division into a "sensible world" and a "mathematical world." Slepian's two-worlds model uses this same idea but without the ontological baggage of Plato's theory. Although Slepian did not use the word, or even hint at it in passing, the difference between his two-world model and Plato's is that Plato's is ontology-centered⁶ while Slepian's is epistemology-centered.

Slepian was a mathematician rather than a philosopher and expressed himself in the language of science rather than the language of philosophy. He called his two worlds "facets" of science. His two-worlds model was presented as a bit of philosophizing about a paradox that appeared to scientists and engineers working in the field of electrical engineering. It was known as "the bandwidth paradox." Slepian wrote,

My starting point is to recall to you that each of the quantitative physical sciences – such as physics, chemistry, and most branches of engineering – is comprised of an amalgam of two *distinctly different* components. That these two facets of each science are indeed distinct from one another, that they are made of totally different stuff, is rarely mentioned and certainly not emphasized in the traditional college training of the engineer or scientist. Separate concepts from the two components are continually confused. In fact, we even lack a convenient language for keeping them straight in our thinking. I shall call these two parts Facet A and Facet B.

Facet A consists of observances on, and manipulations of, the "real world." Do not ask me what the "real world" is: my thoughts become hopelessly muddled here. Let us assume we all understand the term and agree on what it means. . . .

Facet B is something else again. It is a mathematical model and the means for operating with the model. It consists of papers and pencils and symbols and rules for manipulating the symbols. It also consists of the minds of the men and women who invent and interpret the rules and manipulate the symbols, for without the seeming consistency of their thinking processes there would be no single model to consider. When numerical values are given to some of the symbols, the rules prescribe numerical values for other symbols of the model.

⁶ One of the things many people find extremely frustrating about Plato is his persistent inability to come to any answer to any of his own questions. He will start off posing a question such as "what is justice" or "what is beauty", take his reader through page after page of point and counterpoint arguments, and end up leaving his reader with a greater appreciation of the problem but no wiser as to what its answer might be. This is a direct consequence of his ontology-centered view of metaphysics. It is also an inevitable consequence of every ontology-centered metaphysic.

Now, as you all know, we like to think there is an intimate relationship between Facet A and Facet B of a given science. The numerical value associated with symbol V_3 in the model should, in the right circumstances, agree with the reading of the voltmeter we have labeled #3 on the workbench over there, the meter we touch in Facet A. Indeed, so confident are we of this agreement that we use the very same name "the voltage across R_3 " for these two very different quantities, thus confounding hopelessly the distinction between these two constructs. I have carefully said we "like to think" that there is an intimate relationship between the facets because, in fact, under close scrutiny one sees the correspondence as tenuous, most incomplete, and imprecise. There is a myriad of detail in the laboratory ignored in the model. Worse yet, many key parts of the model – many of its concepts and operations – have no counterpart in Facet A. To the extent there is some correspondence between Facets A and B, we have the miracle of modern science – the deepening understanding of our universe, and the bounty and ease of the technological society in which we live. A second order miracle, little recognized or appreciated, is that this first miracle could arise from such a really ragged fit between the facets. [Slepian (1974)]

Slepian's idea is illustrated in figure 1 below. His Facet A, the physical world, is the world of sensible objects and experienced phenomena. This is what he meant by the "real world," and, as it happens, this label also precisely fits what Kant called "the real in experience" (although Slepian might not have been aware of this). Facet B, the mathematical world (which Slepian refers to using the term "model"), is the world of supersensible objects of ideas. These objects are what we call noumena in this treatise. The objects of Facet A are what we call phenomena and phenomenal objects.

The key idea in Slepian's model is that between objects of Facet A and objects of Facet B it is possible to find *practical* correspondences between concepts of phenomena in Facet A and *some* (not all) ideas of noumena in Facet B. The noumenon where a connection of correspondence between phenomena in Facet A and the "mental universe" of noumena in Facet B occurs is what Slepian termed a "principal quantity" of Facet B. Those noumena in Facet B where no immediate connection with Facet A exists are what Slepian called "secondary quantities" of Facet B. They include, for example, the irrational number π ("pi"), "points" and "lines" in geometry, probability distributions used in the mathematics of statistics, and the "evanescent quantities" of Newton's Calculus [Newton (1687)].

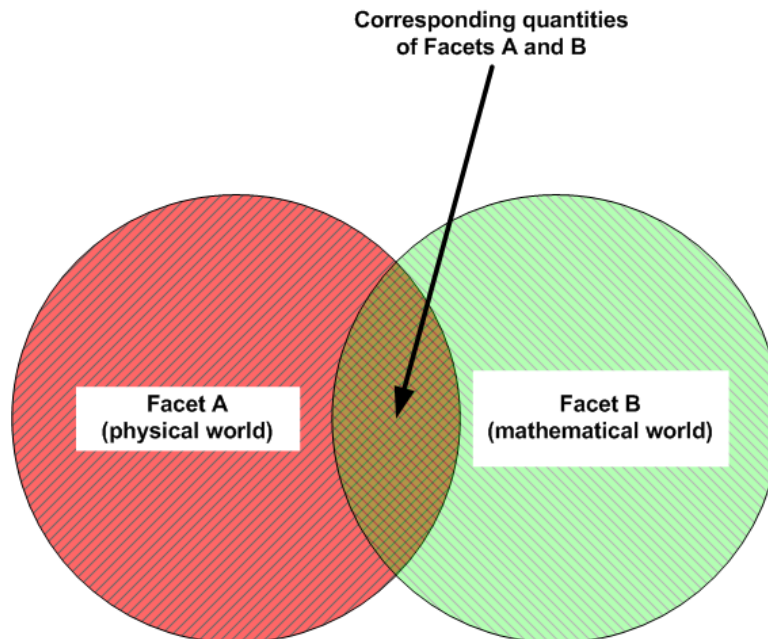


Figure 1: Illustration of Slepian's two-world (two facet) model.

In this way, Slepian was able to solve one of most vexing puzzles in electrical engineering and, by extension, puzzles in many other fields as well. One of these (although Slepian himself did not discuss it) was a perennial question that has dogged philosophers for a very long time: How can mathematics (which is obviously a product of the human mind) explain nature (which presumably is not)? Using Slepian's Facet A-Facet B epistemology-centered viewpoint, the answer is so simple that it might be disappointing: mathematics explains nature because mathematicians and scientists *make* it explain nature. If a mathematical theory does not produce corresponding agreement with natural phenomena it is proposed to explain, the scientist *changes the mathematical formulation* until he finds one that does. If one looks at the world through the lens of an ontology-centered metaphysic, the ability to explain nature by means of mathematics is an insolvable paradox; viewed through the lens of an epistemology-centered metaphysic, the question becomes trivial.

Slepian's principle also has important implications for our topics in this treatise: Critical theology and faith. In order to understand these implications, we must take a look at Kant's doctrine of the horizon of possible experience.

3. The Horizon of Possible Experience

The various ways by which we objectively understand what being-a-human-being is fall into one or the other of two great general classifications: concepts of phenomena of physical body and concepts of the phenomena of mind. It is important at the outset to understand that, in epistemology-centered metaphysics, this "mind-body division" is a merely *logical* division that facilitates our understanding of the phenomenon of being-a-human-being. All our actual experience of a living human being is experience of an *undivided whole* in which we never experience a mind-without-a-body or a body-without-a-mind. All our concepts by which we separate body and mind in our understanding are products of thinking and rationalizing, not products of any immediate experience with a disembodied mind-object or an unminded body-object. Body and mind are, so to speak, two sides of one and the same coin – namely, the phenomenon of being-a-human-being. A person who looks at the world through the lens of an ontology-centered metaphysic is confronted by an insolvable mind-body problem; for a person who looks at the world through the lens of an epistemology-centered metaphysic there is no such thing as a *real* mind-body division. There are only phenomena classified as strictly body phenomena, phenomena classified as strictly phenomena of mind, and joint phenomena pointing to a thorough-going reciprocity of mind-body community (e.g., I feel sad *and* my eyes water; I feel angry *and* my face turns red; &etc.). To go beyond this and draw a real division between mind and body, as Descartes did, is speculation and nothing more.

In this treatise, which is devoted to faith and Critical theology, it is impractical to present in detail the Critical theory of the phenomenon of mind. There is simply too much of it to adequately present here. For the reader who wants to understand the Critical theory in depth, I must refer you to the previous works on that subject [Wells (2006)], [Wells (2009)]. It will, however, be necessary from time to time to present briefly some of its key findings in an abbreviated summary fashion. The discussion underway right now is at such a time.

The Critical science of the phenomenon of mind has this peculiarity: all its objects, without exception, are supersensible. This means they all fall into Slepian's Facet B of science. It is, in the strict sense of the term, a mathematical science but one which is nonetheless solidly anchored to empirical soil. Jean Piaget, the great 20th century psychologist, viewed mental phenomena as something that functionally extends the capabilities of biological phenomena. He wrote,

Life is a continuous creation of increasingly complex forms and a progressive balancing of these forms with the environment. To say that intelligence is a particular instance of biological adaptation is thus to suppose that it is essentially an organization and that its function is to structure the universe just as the organism structures its immediate environment. . . . What we must translate into terms of adaptation are not the particular goals pursued by practical intelligence in its beginnings . . . but it is

the fundamental relationship peculiar to consciousness itself: the relationship of thoughts to things. The organism adapts itself by materially constructing new forms to fit them into those of the universe, whereas intelligence extends this creation by constructing mentally structures which can be applied to those of the environment. In one sense and at the beginning of mental evolution, intellectual adaptation is thus more restricted than biological adaptation, but in extending the latter, the former goes infinitely beyond it. [Piaget (1952), pp. 3-4]

Piaget was one of very few psychologists who view the world through an epistemology-centered lens. He never at any time in his long career tried to vivisect human beings into separate body and mind pieces.

Let us take a first look at these ideas of "structure" and "structuring." Let us define "representation" as a primitive mental act describable as "something in me that refers to something else" [Kant (1794-95) 29: 970]. We will also call the outcome of this act "a" representation (owing to the absence in the English language of a more suitable term). This definition obviously supposes a human being has the ability to carry out such an act, but this supposition does not seem to be a risky one because we each know we have an ability to think and thinking is one kind of representation. Let us call the ability to perform such an act "the power of representation." Let us define "intuition" as "the immediate reference of the power of representation to an individual Object" [Kant (1776-95) 18: 282]. Finally, let us define a concept as "a rule for the reproduction of an intuition." Concepts are constructed rules of understanding by which we each construct our personal experiences. The interconnected structure of your concepts is called your *manifold of concepts*.⁷ Indeed, this structure provides the *practical* explanation of what "understanding" means.⁸ A (very) simplified illustration of the idea of the manifold of concepts is depicted in figure 2 below. The vertical direction in this figure denotes the amount of sensational matter contained in (that is, reproducible by means of) a concept.

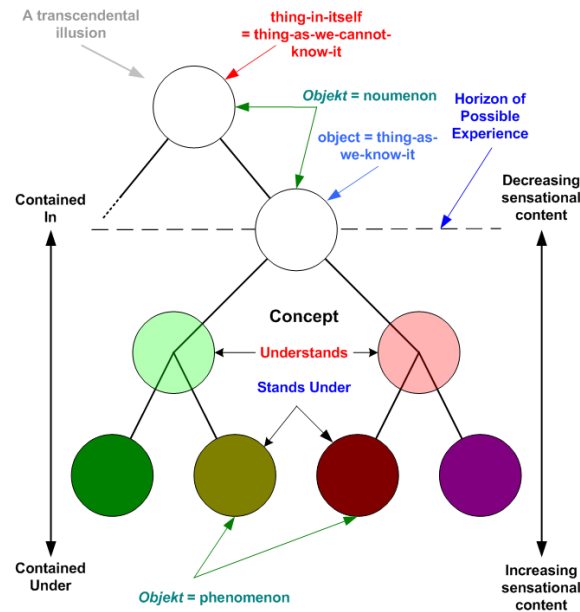


Figure 2: Phenomena, noumena, and the idea of the horizon of possible experience. The circles represent concepts and the lines represent connections between concepts formed by judgments. Colors represent matters of sensations contained in the concept while the figure of the circle denotes the representation of its non-sensuous (mathematical) form. Each concept is an immediate representation of a rule but only a mediate mental representation of an Object.

⁷ Some philosophers – e.g. John Locke – regard a concept as if it was some sort of mental "brick" or "atom." This is quite incorrect. By "a concept" we mean only a represented rule without any prejudicial judgment of supposed ontological properties. Mental Objects have *epistemological* significance but no *ontological* significance at all.

⁸ That which we call "understanding" is a mental Object and therefore belongs in Slepian's Facet B.

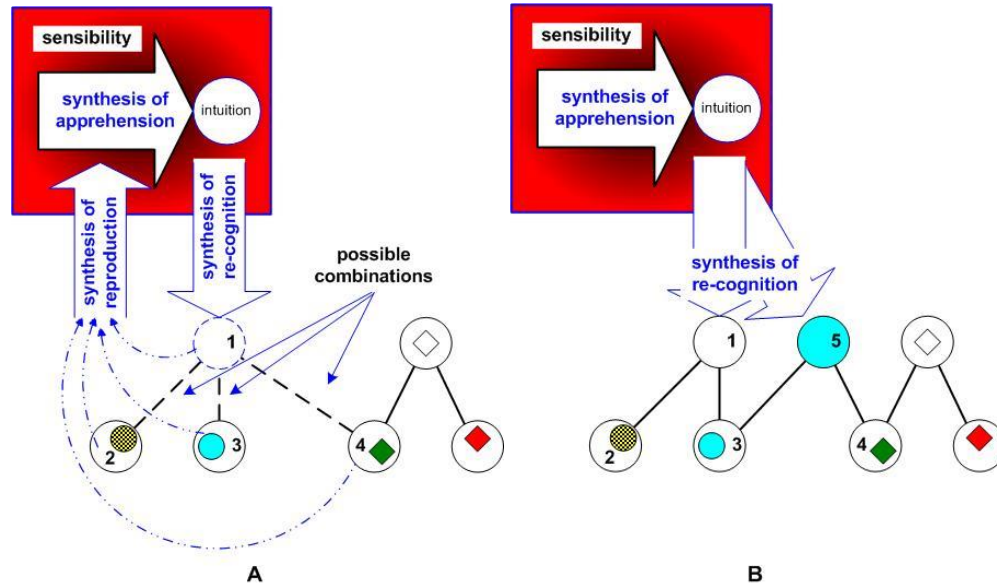


Figure 3: Illustration of the synthesis and connection of concepts in the manifold of concepts. A: an intuition represented in sensibility is re-cognized as a new concept (1). This new concept, along with other already existing concepts, are reproduced in sensibility by a synthesis of imaginative reproduction in order to connect new concept (1) with other concepts in the manifold. B: this process of imaginative reproduction and re-cognition cycles until the structure of the manifold comes to equilibrium and concept (1) is connected with concepts (2) and (3). During this process more new concepts (5) may also be produced and connected with other concepts (3 and 4).

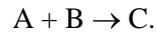
A rule is an assertion made under a general condition [Kant (1800) 9: 121]. This is the basic definition although in normal speech we also use the word "rule" to mean what is asserted, e.g., "the rule is 'look both ways before crossing the street'." The rules represented by concepts are not left somehow floating about unconnected with one another. Rather, they are made to become interrelated by mental acts of *judgment* – processes that synthesize and organize the manifold of concepts.

Operationally, a judgment in general is the act of subsuming a particular mental representation under a general one that serves as a rule. In figure 2, the lines connecting the concept circles are outcomes of acts of judgment which serve to connect the concepts in a manifold. With regard to concepts, there are two kinds of acts of judgments. Determining judgment is the capacity for making judgments when the general rule is given and particular rules to be subsumed under it are found. Reflective judgment is the capacity for making judgments when the particulars are given and the general rule is formed. A concept that has been subsumed under a more general concept is said to be a *lower concept* in relationship to the concept it has been subsumed under. The more general concept is called the *higher concept* in relationship to concepts subsumed under it [*ibid.*, 9: 96]. A lower concept is said to "stand under" a higher concept, and a higher concept is said to "under-stand" the lower concepts connected to it.

This relationship of higher to lower concepts in the manifold of concepts gives us the practical definition of what "understanding" means as a verb. However, we also use the word "understanding" as a noun to mean the capacity for making a cognizant structure of rules by means of representations, and also to refer to the state of empirical knowledge determined by such a structure of rules.

Concepts are made and connected by a process of synthesis Kant called "the free play of imagination and understanding" [Kant (1790) 5: 217-219]. It is the cognitive act in what we call *thinking*. Recall Piaget's remark above about "intelligence" being an organism's organizing of its understanding of the universe. Thinking is central to human intelligence and plays a vital role in a human being's ability to accommodate himself to the world in which he lives [Wells (2016)]. Indeed, the human power to think appears to be humankind's greatest asset for survival compared to all other creatures on earth.

In the making of a higher concept, a part of this process consists of extracting from lower concepts everything contained in common by all of them and omitting everything by which they differ. The latter is called the *act of abstraction*. A higher concept, then, is more abstract than the concepts standing under it. Abstraction can be symbolically illustrated by combining two concepts, $A = \{a, b, c, d, \alpha, \beta, \gamma\}$ and $B = \{b, c, f, \alpha, \gamma, \delta, \varepsilon\}$ to synthesize a higher concept $C = \{b, c, \alpha, \gamma\}$. Here I am using roman letters to symbolize sensations reproduced by the rule of the concept and Greek letters to symbolize the form of the reproduced intuition. Using a notation similar to that used in chemistry, the synthesis can be expressed as



Rephrased in English, you read this as "the synthesis of A and B produces C."

Now, as this on-going process of thinking and synthesis of higher concepts is continued, eventually a point will be reached where the higher concept C no longer contains any sensational content. When there are no sensations contained in the rule, no sensations can be reproduced in intuition by that rule. The Object represented by the intuition is then said to be a *supersensible* Object – a noumenon. This Object is for this reason *not an object of possible experience* because, for human beings, experience is only possible when we are informed of the presence of an Object by means of our sensations. Kant wrote,

There is no doubt whatever that all our knowledge begins with experience; for how else should the faculty of knowledge be awakened into exercise if not through objects that move our senses and in part bring about representations, in part bring the activity of our understanding into movement to compare these, to connect or separate them, and thus to work up the raw stuff of sensuous impressions into a cognition of objects that is called experience? [Kant (1787) B: 1]

When a concept contains nothing in its rule by which sensation can be reproduced in intuition, that concept is given a special designation: it is called an *idea*. The Object represented by an idea is then a denizen of what Slepian called Facet B and has no immediate counterpart in Facet A. Referring back to figure 2, the *first* occurrence of a higher concept from which all sensation is removed by abstraction is said to stand "at the horizon of possible human experience." The object it represents can be called a thing-as-we-know-it.

However, the mere absence of sensuous content in an idea does not prevent the process of thinking from going on to produce even higher ideas through judgments of lower ones. These higher ideas, though, are not motivated by a person's receptivity of the outer senses. Rather, they are motivated by internal *psychological* factors [Wells (2016)]. They are, in other words, pure products of rationalization. The object of such a higher idea – which stands beyond the horizon of possible human experience – can be called a thing-in-itself (*Ding an sich selbst*) or "thing-as-we-cannot-know-it." The object is a pure creation of the fictive faculty. Its idea is what Kant called a transcendental illusion because its existence is due to nothing other than one's reasoning process. (This is why we say we cannot *know* the object).

I must stress, however, that a transcendental illusion is a *thorough-going* illusion. We not only cannot say "the object really exists"; *we also cannot say "the object doesn't really exist."* Both of these are what are called "real predicates" and for the object of a transcendental illusion **no real predicate can be legitimately asserted as knowledge**. You can make a *logical* predication of it. You can even hold-it-to-be-true and no one can say you're wrong (because no one else can make a real predication about it either). But you cannot be *certain* it is true. This act of holding-it-to-be-true is called *faith*.

Objective validity means: the context of the concept of an object in which the concept is valid and the object is placed in an ontological real context in accordance with fundamental principles of Critical epistemology. A concept lacking objective validity is logically possible (it can be thought) but objectively problematic (doubtful as to whether or not the concept is true). Among the most important questions a theology must address are questions about the *existence* of its objects. Here the English language poses some hindrances to understanding because there are two important but distinct connotations of the word

"existence" that the English language fails to make distinct. For this reason, Critical epistemology uses two German words to make these contexts clear and distinct. The first word is *Dasein*: existence in the context of that-which-exists. To assert the *Dasein* of an object asserts nothing more than that the object exists without making any assertion about the manner in which it exists. Assertions of the latter are called assertions of *Existenz*: existence in the context of the-manner-in-which-something-exists. This term, *Existenz*, predicates the forms of appearance in the intuition of the object and its formal relationships with other objects.

To say "God exists" is an assertion of *Dasein*. To say "God is the Lord of Hosts" is an assertion of *Existenz*. In logical terminology, *Dasein* merely announces the subject of a predication, *Existenz* is what is predicated. To assert "God exists" is to announce the *Dasein* of an Object called "God" without saying anything more about this Object. All further predications in which God is the subject of the predication are predications about the *Existenz* of God. As I will explain later, objectively valid assertions of the *Dasein* of an noumenon are possible even when objectively valid assertions about its *Existenz* are not. One of these objectively valid assertions is worth bringing up right now: the assertion "I am."

For each one of us, *individually*, the knowledge of our own real existence – our individual *Dasein* – is knowledge of the only noumenon whose *Dasein* is **absolutely certain**. One can entertain doubts about whether other people "really exist" – a solipsist does precisely that (or at least claims to do so⁹) – but none of us doubt our own individual real existence even if we aren't certain about all the details of our own individual *Existenz*.¹⁰ Each person is, for him- or her- self, the absolute reference point and standard for judging the reality and actuality of all other things. Even Descartes did not doubt his own *Dasein* while, at the same time, he was entertaining many deep doubts about concepts pertaining to his own *Existenz*. Not even David Hume – philosophy's Great Skeptic – doubted his own personal *Dasein*. Perhaps in this we catch a blurry glimpse of what might have led Protagoras to declare "man is the measure of all things." Kant called the Object of this knowledge of one's own *Dasein* "the *I* of transcendental apperception."

In Critical epistemology, a person's *horizon* is the adequacy of his collective cognitions for utilizing his capabilities and satisfying his purposes. What we cannot know is said to be *beyond* our horizon; what we do not need to know is said to be *outside* our horizon. The horizon of possible experience is the farthest extension of deep distinctness in understanding, beyond which no speculative objective validity can be claimed for concepts. Ideas that immediately understand concepts containing sensational matter define when this farthest extension of objectively valid understanding is reached.

4. Critical Ontology

Phrases like "objectively understand what being-a-human-being is" mean "understand being-a-human-being" *as an object*. An *ontology* is a constituted system of all concepts and principles related to understanding objects in general. Every human being constructs a *private* ontology for him- or her- self beginning in infancy, and without this private ontology a person would be forever trapped in an isolated and autistic solipsism. Personal ontologies are idiosyncratic and their idiosyncrasies stem from people's accidents of experience. They are encumbered by many subjective habits, biases, and prejudices. The most common by far of these I call *naive realism*: a world of material objects exists; our senses tell us all about these objects; we perceive the world directly and as it is really is. Every human being begins life as a naive realist. Naive realism is practical, pragmatic, unreflective, pre-philosophical. If it had a motto, the old saying "seeing is believing" would suit it well. (*Belief* is **unquestioned** holding-to-be-true). Naive realism is erected upon subjective foundations – subjectively sufficient reasons for holding-to-be-true.

⁹ Bertrand Russell liked to tell an anecdote about his once meeting a woman who told him, "I am a solipsist and I don't understand why other people aren't, too."

¹⁰ For example, I regard the hair on my head as part of "me." But when that same hair is lying on the floor of the barbershop, I think it is no longer part of me. Yet, still, I can discern no change in "my essential Self." So, is my hair "really" part of me or is it not? This is a question concerning the nature of my own *Existenz* but not my own *Dasein*.

Characteristics of naive realism can be and have been examined by studying the psychology of young children. Piaget found,

The child, like the uncultured adult, appears exclusively concerned with things. He is indifferent to the life of thought and the originality of individual points of view escape him. His earliest interests, his first games, his drawings are all concerned solely with the imitation of what is. In short, the child's thought has every appearance of being exclusively realistic.

But realism is of two types, or rather, objectivity must be distinguished from realism. Objectivity consists in so fully realizing the constant intrusions of the self in everyday thought and the countless illusions which result – illusions of language, point of view, value, etc. – that the preliminary step to every judgment is the effort to exclude the intrusive self. Realism, on the contrary, consists in ignoring the existence of the self and thence regarding one's own perspective as immediately objective and absolute. Realism is thus anthropocentric illusion, finality – in short, all those illusions which teem in the history of science. So long as thought has not become conscious of self, it is prey to perpetual confusions between objective and subjective, between the real and the ostensible [Piaget (1929), pp. 33-34].

Some of the manifestations of naive realism exhibited by children include animism, moral necessity, participation (the belief that things "participate" with each other by magical means), and artificialism (the belief that all things are the product of art analogous to human techniques) [*ibid.*]. It is interesting to note that lingering traces of many of these same manifestations of naive realism were observed in the BaMbuti by Turnbull [Turnbull (1962)]. We also can rather easily observe them in all the world's diverse religions.

To remove this factor of subjectivity (as much as humanly possible) and arrive at a *scientific* ontology, ontology must be made into a Critical science. *Critical* ontology is ontology regarded as the science of the properties of all things in general, and it is derived from fundamental principles of Critical epistemology. It does not seek to know a thing-in-itself but, rather, what we *mean* when we identify something as an object, what we *think* a thing is, and *why* we think so. Critical ontology cannot answer the questions we have concerning supernatural noumena – *no* science can speak to the supernatural – but it *can* help us to understand how to pose these questions properly and can provide us with some guidance for speculation.

A qualitative appreciation of the relationships among the ideas of scientific ontology, the horizon of possible experience, and the manifold of concepts can be gained by studying and contemplating the illustration provided by figure 4. This figure illustrates the structure of Critical ontology.

At Critical ontology's core are Objects of the most raw and unrefined objective perceptions. These objects are non-abstract and provide the aliments of understanding. Using psychological language, one can say these objects are syncretic objects. Syncretism in psychology refers to the tendency in cognition to coalesce as much sensuous content as is possible in the intuition of an object. American psychologist and philosopher William James described the phenomenon of syncretism thusly:

Experience from the very first presents us with concentered objects, vaguely continuous with the rest of the world which envelops them in space and time, and potentially divisible into inward elements and parts. These objects we break asunder and reunite. . . . The noticing of any *part* of our object is an act of discrimination. . . . Where the parts of an object have already been discerned, and each made the object of a special discriminative act, we can with difficulty feel the object again in its pristine unity; and so prominent may our consciousness of its composition be that we may hardly believe that it ever could have appeared undivided. But this is an erroneous view, the undeniable fact being that *any number of impressions, from any number of sensory sources, falling simultaneously on a mind WHICH HAS NOT YET EXPERIENCED THEM SEPARATELY, will fuse into a single undivided object for that mind.* The law is that all things fuse that *can* fuse, and nothing separates except what must. [James (1890), vol. I, pp. 485-486]

For a new-born baby just embarked on constructing its manifold of concepts, these Objects of perception

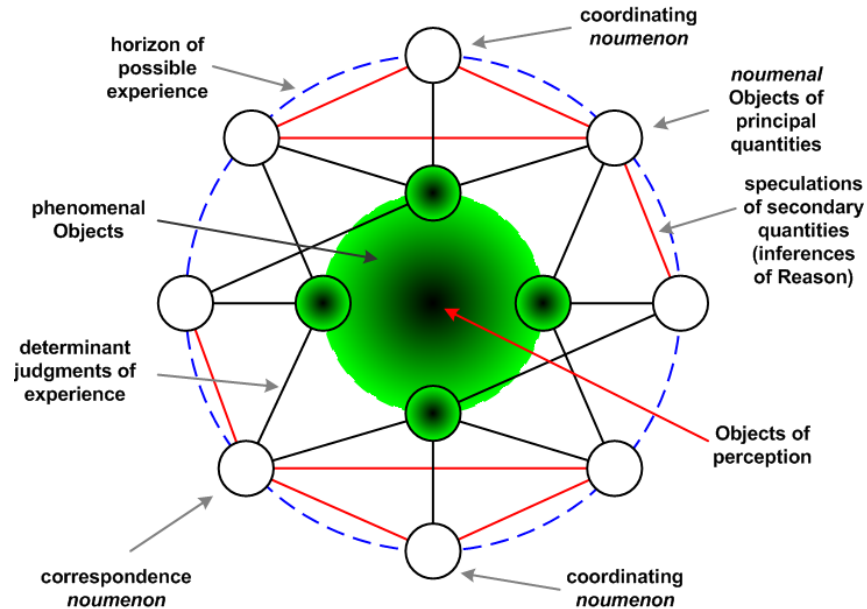


Figure 4: Illustration of the structure of a scientific ontology. At its core are the most raw Objects of perception. From these higher concepts of phenomenal Objects are structured through judgments. Noumena abstracted from these stand at the highest (here depicted as outermost) levels. Here we can distinguish two types of principal quantities: correspondence noumena and coordinating noumena. A correspondence noumenon is abstracted from and connected by judgment to two or more phenomenal Objects and represents a noumenal thing-as-we-know-it. A coordinating noumenon has but a single connection by judgment to one phenomenal Object but is connected by ideas of secondary quantities to two or more correspondence noumena. The concept of a coordinating noumenon is an idea of relationship between correspondence noumena. Secondary quantities are depicted in this figure by red connecting lines between noumena. Correspondence and coordinating noumena stand at the horizon of possible experience. Noumena of secondary quantities stand *beyond* this horizon. In Critical ontology none of these noumena represent supernatural Objects. Supernatural noumena are not depicted in this figure because no science can deal with the supernatural and, therefore, supernatural noumena are *outside* the horizon of a scientific ontology.

are the first items of its objective mental business and the seeds for the growing of its experience. It is reasonable to speculate that the reason people cannot remember in a communicable form anything from the first two years of their lives is because this stage of life is so completely dominated by the harvesting of a store of syncretic Objects of perception.

Later psychologists independently confirmed what James described and gave it the scientific dignity of a named terminology. Piaget wrote,

Recent research on the nature of perception . . . has led to the view that objects are recognized and perceived by us, not because we have analyzed and seen them in detail, but because of "general forms" which are as much constructed by ourselves as given by the elements of the perceived object, and which may be called the schema or the *Gestaltqualität* of these objects. For example, a word passes through the tachistoscope far too rapidly for the letters to be distinguished separately. But one or two of these letters and the general dimensions of the word are perceived, and that is sufficient to ensure a correct reading. Each word, therefore, has its own 'schema.'

M. Claparède, in a general note on the perceptions of children, has shown that these schemas are far more important for the child than for us, since they develop long before the perception of detail. For example, a child of 4 who did not know his letters and could not read music managed to recognize the different songs in a book from one day or one month to another simply by their titles and from the look of the pages. For him the general effect of each page constituted a special schema, whereas to us, who perceive each word or even each letter analytically, all the pages of a book are exactly alike.

Children therefore not only perceive by means of general schemas, but these actually supplant the perception of detail. Thus they correspond to a sort of confused perception, different from and prior to that which in [adults] is the perception of complexity or of forms. To this childish form of perception M. Claparède has given the name of syncretistic perception [Piaget (1930), pp. 131-132].

An adult has a vastly richer and more complex manifold of concepts than a young child owing to his accrual of vastly more experience. This richer structure allows adults to resolve immediate perceptions into perceptions of higher Objects (called phenomenal Objects in figure 4), literally "in the blink of an eye," by means of what Kant called the free play of imagination and understanding. Indeed, sometimes this resolution is made in such haste that one "gets a misperception" and mistakes something for something else. Often this occasions what is usually called a "double take," e.g., looking a second time at something initially seen "out of the corner of one's eye." For example, if I am walking past a room with an open door and happen to catch a glimpse of a dark colored heating vent in the floor, I sometimes perceive that vent to be a small black dog. Precisely why I am prone to making this misperception I don't know. The color of the vent must be in sharp contrast with the color of the floor for it to happen, so perhaps I have built some mental "schema" that biases me to pluck out of my raw perception the concept "small black dog." Upon taking a *second* look I perceive the vent to be a vent and not a dog. This perceptual misfire didn't appear until I was in my twenties – a clue that it stems from some developed schema¹¹.

In adults this "lightning resolution" of a syncretic Object of perception is carried out so quickly that one does not even notice it. But sometimes, on rare occasions, it happens that an adult might encounter a situation in which the Object of perception is so new and unfamiliar to him that this rapid recognition process is checked. When it does, we use words like stunning, baffling, bewildering, or dumfounding to describe the experience. I had an experience of this sort one time when I walked into the very ornate and heavily gilded lobby of a hotel in downtown San Francisco. The place was so huge and garish that for a very long moment I couldn't make out *anything* I was seeing. To me it was all one great glob of colors and shapes. My first reaction to this can best be called a feeling of sublimity¹². It gave me noticeable pause before I could make out the front desk, a bellhop, guests both with and without luggage moving about, its ornate and open-to-view staircase rings, and other common objects. This sort of experience can provide clues for understanding the idea of the general structure of one's manifold of concepts in relationship to one's private and personal ontology.

At the uttermost boundary of objectively valid Objects in Critical ontology are the noumena of principal quantities of mathematics standing right at the horizon of possible experience. These noumena are Objects of ideas – concepts that contain no rules for the reproduction of matters of sensation in intuition. These noumena are *products of experience* but are never themselves *actually experienced*. Their ideas have objective validity *only as predications of the Dasein of an object, never as predications of the Existenz of that object*. All additional ideas pertaining to the *Existenz* of that object are still-higher ideas beyond the horizon of possible human experience, and their objects are pure denizens of Slepian's Facet B. They can have *logical* validity but not *objective* validity. They have *epistemological* significance but not *ontological* significance. Because of this figure 4 does not depict them. They are "super-ontological" constructions. Figure 5 illustrates this using Slepian's two-facet dimensioning.

¹¹ It was not until the 20th century that modern neuroscience definitively refuted once and for all the old "blank tablet" speculation of philosophers that sensory perceptions were "impressed upon the mind" like some kind of signet ring seal. Noted neuroscientist Walter Freeman wrote, "Our brains don't take in information from the environment and store it like a camera or tape recorder for later retrieval. What we remember is being continually changed by new learning, when the connections between nerve cells in brains are modified" [Freeman (1998)]. Put crudely, the brain "rewires" itself constantly and this "rewiring" is a physical counterpart in biology to "schemas" in psychology.

¹² It will perhaps not surprise you that "feelings of the sublime" have a strong role to play in religious experiences. It is therefore important for us to have an idea of how it is human beings come to have such feelings. This topic is discussed in detail in chapter 8 of Wells (2009) and is an important topic later in this treatise.

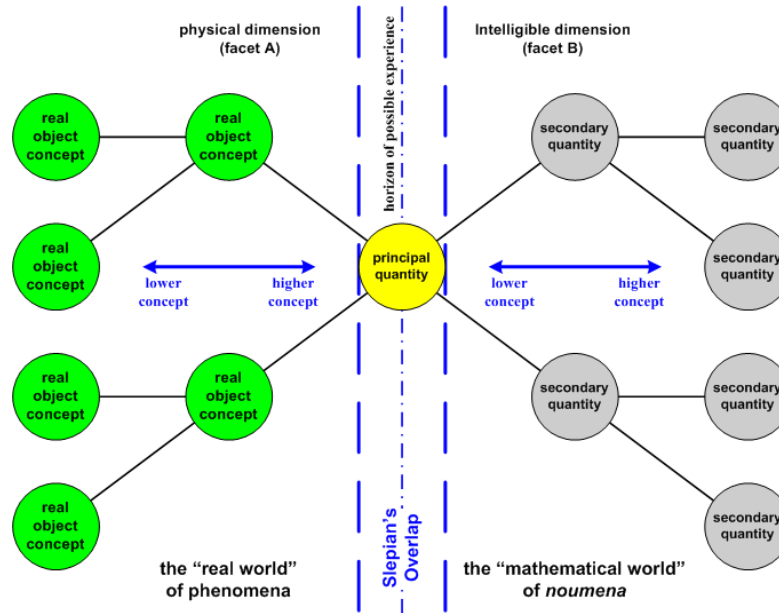


Figure 5: Illustration of the juncture of empirical concepts of Facet A and mathematical concepts of Facet B.

As for those objectively valid noumena at the horizon of possible human experience, the ground of their objective validity is found in a regulative principle of reasoning in the phenomenon of mind that Kant called the Cosmological Idea. This is an *a priori* rule of human reasoning that regulates for the process of Reason to seek for absolute completion in a series of conditions for appearances [Wells (2006), chap. 4]. Note carefully that the regulation compels human reasoning to *seek* for completion of the series of conditions; nothing in it says we will ever *find* it in any *objectively valid* way. For noumena of principal quantities (figure 5) there are a limited number of ways by which the objective validity of the *Dasein* of the object can be established under the Cosmological Idea. Probably the one most familiar to most people involves inferences of causality and dependency. Causality is the notion of the determination of a change by which the change is established according to general rules. Causality-and-dependency is the pure *a priori* notion of the connection of concepts in a real and necessary time-ordering of appearances.

Noumena at the horizon of possible experience are, in a manner of speaking, steps along a pathway of seeking perfection. They are not at all the *end* of the path because the regulation of the Cosmological Idea does not bring the effort to an end with them. It continues to compel us to continue the search, to push us on to make further speculations even though empirical *verification* of these speculations in actual experience is impossible for a human being to achieve. It is in our nature to *strive* for this perfection nonetheless. One of the ways we strive to achieve this is religion. Robert Browning wrote,

Ah, but a man's reach must exceed his grasp, or what's a heaven for? [Andrea del Sarto, l. 97]

The poetry describes the effort; Critical epistemology supplies the reason the effort is necessary.

Noumena of secondary quantities are objects of *made* concepts. One class of such noumena is the class of objects used in formal mathematics. Although all noumena are mathematical, the mathematician's class of noumenal objects is comprised of crisply *definable* things that have no meaning when considered in isolation. They derive meaning only from formal structures of relationships and laws of combination mathematicians invent to link them together [Davis & Hersh (1981), pp. 140-146]. A mathematician *defines* what a point is, what a line is, what a circle is, what a natural number is, and so on. At root the definitions are practical in the sense that the definition prescribes a rule of construction. Indeed, mathematics itself from the practical Standpoint is a tool the sciences use to construct empirical

knowledge [Wells (2014), chap. 14], [Kant (1804) 22: 490]. A mathematician's noumenon is what it is because he *defines* it to be that way and no other. His definition provides it with epistemological significance but in no way endows it with ontological significance. If his object has any bearing on or application to Facet A, this bearing or application plays no part in the mathematician's *intentions* when he defines his object. Usually any such bearing or application is discovered or developed by a scientist who is himself a consumer rather than a creator of mathematics.

Kant tells us that a *definition* is a sufficiently distinct and precisely delimited concept [Kant (1800) 9: 142-142]. He further tells us that not all concepts can be defined and not of them need to be defined. An empirical concept, for example cannot be defined. Rather, it is *described*. He tells us the *expounding* of a concept subsists in the hanging of successive representations of its marks on one another so far as these marks are found through analysis. A *description* is the exposition of a concept so far as it is not precise.

The great majority of noumena of secondary quantities are objects of exposition and description *intended* to have some specifiable bearing on Facet A even though they have no immediate identification with phenomenal objects in Facet A. This is something that importantly separates them from the defined noumena of the mathematician. Scientists use descriptive noumena extensively. Mass and energy are two examples. Theologians – whose work deals with supernatural noumena – must necessarily use descriptions exclusively in their expositions. In these descriptions they also must make speculations linking these noumena to human beings. One important – indeed, *very* important – linkage in theology is that which connects the idea of God (or gods) to the objectively valid principal quantity we call a "cause." The objective validity of positing the *Dasein* of a cause for empirically sensible effects is grounded in the principle of the Cosmological Idea. But the connection of this object to supernatural objects lacks objective validity¹³ – it is non-ontological – because the noumenon of a cause is not itself an object of possible *experience*. This is why supernatural noumena are *outside* the horizon of Critical ontology.

They are not, however, outside the horizon of theology and, in particular, Critical theology. I think the following chapters in this treatise will amply illustrate that theology is concerned with what I will call "speculations of a super-ontology" for want of a better term. We will discover no *science* of theology; that is not the goal here. Rather, the goal here was well stated by Anselm of Canterbury: *faith seeking to understand* [Anselm (1059), pg. 87]. Building from the epistemological backdrop discussed so far, we will begin this quest in chapter 3. This will bring us to what I call "the first article of faith."

References

- Anselm (1059), *Proslogion*, in *Anselm of Canterbury: The Major Works*, Brian Davies & G.R. Evans (eds.), Oxford, UK: Oxford University Press, 1998.
- Augustine (c. 397-400), *Confessions*, R.S. Pine-Coffin (tr.), London: Penguin Books, 1961.
- Davis, Philip J. & Reuben Hersh (1981), *The Mathematical Experience*, Boston, MA: Houghton Mifflin Co.
- Freeman, Walter J. (1998), "The lonely brain," in *Mapping the Mind*, Rita Carter, pg. 146, Berkeley, CA: University of California Press, 1998.
- Goldman, Jason G.(2013), "Do animals have imagination?" <http://www.bbc.com/future/story/20130207-can-animals-imagine>, 7 Feb., 2013.
- James, William (1890), *The Principles of Psychology*, in 2 volumes, NY: Dover Publications, 1950.
- Kant, Immanuel (1776-95), *Reflexionen zur Metaphysik*, 2nd part, in *Kant's gesammelte Schriften*, Band

¹³ It is perhaps a subtlety but still important to understand that "lacking objective validity" does not mean the same thing as "objectively invalid." The latter carries the connotation that the concept is *false*, the former merely that it cannot be *known-to-be-true* of the object. One can, without censure, have *faith* in noumena of theology.

- XVIII, pp. 3-725, Berlin: Walter de Gruyter & Co., 1928.
- Kant, Immanuel (1787), *Kritik der reinen Vernunft*, 2nd ed., in *Kant's gesammelte Schriften, Band III*, Berlin: Druck und Verlag von Georg Reimer, 1911.
- Kant, Immanuel (1790), *Kritik der Urtheilskraft*, in *Kant's gesammelte Schriften, Band V*, pp. 165-485, Berlin: Druck und Verlag von Georg Reimer, 1913.
- Kant, Immanuel (c. 1790-91), *Metaphysik L₂*, in *Kant's gesammelte Schriften, Band XXVIII*, pp. 531-610, Berlin: Walter de Gruyter & Co., 1970.
- Kant, Immanuel (1794-95), *Metaphysik Vigilantius (K₃)*, in *Kant's gesammelte Schriften, Band XXIX*, pp. 943-1040, Berlin: Walter de Gruyter & Co., 1983.
- Kant, Immanuel (1800), *Logik*, in *Kant's gesammelte Schriften, Band IX*, pp. 1-150, Berlin: Walter de Gruyter & Co., 1923.
- Kant, Immanuel (1804), *Opus Postumum*, 2nd half, in *Kant's gesammelte Schriften, Band XXII*, Berlin: Walter de Gruyter & Co., 1938.
- Margenau, Henry (1977), *The Nature of Physical Reality: A Philosophy of Modern Physics*, Woodbridge, CT: Ox Bow Press.
- Marías, Julian (1967), *History of Philosophy*, NY: Dover Publications.
- Newton, Isaac (1687), *The Principia: Mathematical Principles of Natural Philosophy*, Seattle, WA: printed by CreateSpace, a division of Amazon, ISBN 978-1-60796-240-3.
- Piaget, Jean (1929), *The Child's Conception of the World*, Savage, MD: Littlefield Adams, 1951.
- Piaget, Jean (1930), *The Language and Thought of the Child*, 2nd ed., London: Routledge and Kegan Paul, 1932.
- Piaget, Jean (1932), *The Moral Judgment of the Child*, NY: The Free Press, 1965.
- Piaget, Jean (1952), *The Origins of Intelligence in Children*, Madison, CT: International Universities Press, 1974.
- Piaget, Jean (1983), *Possibility and Necessity*, in two volumes, Minneapolis, MN: University of Minnesota Press, 1987.
- Quran, M.A.S. Abdel Haleem (tr.), Oxford, UK: Oxford University Press, 2016.
- Slepian, David (1974), "On bandwidth," second Shannon Lecture at the International Symposium on Information Theory, Notre Dame University, Notre Dame, IN, Oct. 31, 1974. Slepian's lecture was later published under the same title in *Proceedings of the IEEE*, vol. 64, Mar. 1976, pp. 292-300.
- Torah (date uncertain), London, UK: Kuperard, 2004.
- Turnbull, Colin M. (1962), *The Forest People*, NY: Simon and Shuster.
- Wells, Richard B. (2006), *The Critical Philosophy and the Phenomenon of Mind*, available free of charge from the author's web site.
- Wells, Richard B. (2009), *The Principles of Mental Physics*, available free of charge from the author's web site.
- Wells, Richard B. (2012), *The Idea of the Social Contract*, available free of charge from the author's web site.
- Wells, Richard B. (2014), *The Institution of Public Education*, vol. III of *The Idea of Public Education*, available free of charge from the author's web site.

Wells, Richard B. (2016), "Why people think," available free of charge from the author's web site.

Zeller, Eduard (1883), *Outlines of the History of Greek Philosophy*, 13th ed., NY: Dover Publications, 1980.

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