Chapter 7 Innocent Foundations

1. Remark on the Critical Doctrine of Theological Method

With apologies for being repetitive, this treatise seeks to discover what theological lessons we might learn by examining human nature beginning from the premise God created humankind and did so purposively. Critical theology is faith seeking understanding and answers for those perennial questions of *Existenz* that human beings have struggled with for thousands of years. Anselm prayed,

Let me discern Your light whether it be from afar or from the depths [Anselm (1059), pg. 86].

The Object of Critical theology is the same as his, viz.,

meditation on the meaning of faith from the point of view of one seeking, through silent reasoning within himself, things he knows not [*ibid.*, pg. 82].

Where Critical theology differs from other theologies is that it is epistemology-centered in the way it looks at things whereas the others are ontology-centered. It does not expect God to reveal himself to us but does seek to find what God may have revealed in human nature as suggested in the New Testament,

The kingdom of God is within you. [Luke 17:21]

If God created humankind, and if human beings are in some manner or way reflections or an image of God, and if this creation is divinely purposive, then the footprints of divine purposes should, logically, appear in our own natures. This is a lot of "ifs" to string together but their combination covers all three *a priori* functions of Relation that Critical epistemology tells us are necessary for the possibility of human understanding [Wells (2009), chap. 5]. Kant calls these functions categories of understanding. There are twelve of them (figure 1 below), and they are the pure and *a priori* rules of determining judgment in the structuring and construction of concepts. The three "ifs" strung together here pertain to the mental nature of human beings (substance & accident), God as the creator of humankind (causality & dependency), and reciprocal relationships between God and human beings in expressions of divine purposes (community). In stringing these "ifs" together, Critical theology is trying to synthesize a unity of understanding out of a plurality of relationships pertaining to God, humankind, and our experiences of the world [Kant (1804) 21: 78].



Figure 1: Kant's categories of understanding. These are the *a priori* rules by which the process of determining judgment constructs and structures concepts in the manifold of concepts. Every determinant judgment of a concept involves four of these, one taken from each of the four heads of Quantity, Quality, Relation, and Modality. Technical explanations of each category are provided in Wells (2009) chap. 5.

The search for answers begins with human mental nature for therein lie our only clues to the divine. The phenomenon of mind is a vastly complicated topic and one which is itself independent of theology. Its *scientific* study is propaedeutic to Critical theology because the doctrine of method for the latter is built upon foundations provided by the findings of the former. What I mean by this is illustrated by analogies with the study of engineering or medicine. Before an engineering student can properly begin studying engineering itself, prerequisite studies of mathematics, physics, chemistry, and rudimentary economics are needed because the practice of engineering applies concepts and findings of these studies to solving real problems in the real world. Before a medical student can properly begin studying medicine, prerequisite studies of chemistry, biology, and rudimentary mathematics and physics are needed because the practice of medicine calls upon concepts, findings, and theories from these fields. These studies do not suffice to make the student a professional mathematician, chemist, physicist, etc. but instead provide the necessary foundations for becoming a professional engineer or a physician.

In the same way, this treatise calls upon concepts, findings, and theories of the Critical study of the phenomenon of mind. Accordingly, in this treatise you find rudimentary presentations of these but not an in-depth treatment of them. For the latter, I must refer you to Wells (2006), Wells (2009), and other Critical works cited in the course of discussions presented here. I also feel obliged to repeat my oft-made caution that these Critical findings arise out of the epistemology-centered way of looking at the world – and because of this you will encounter findings that run contrary to what ontology-centered ways of looking at the world produce. If – and I am strongly tempted to say "when" instead of "if" – you encounter ideas here that you find profoundly disturbing to your understanding, all I can do here is to assure you that these Critical findings have been vetted by very thorough scientific *empirical* studies of psychology and neuroscience, and in every case data obtained from these studies are fully congruent with the Critical theory. Many of these comparisons can be found in Wells (2006) and Wells (2009).

Jean Piaget, who many regard as the greatest child psychologist of the twentieth century [Hunt (1994), pp. 354-368], 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 thought 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 far beyond it. [Piaget (1952), pp. 3-4]

One thing that might not pop right out at you from this quote is that biological adaptation in evolutionary terms is an idea that applies to *species* but physiological and intellectual adaptation are ideas that applies to *individuals* [Thain & Hickman (2004), "adaptation"] and, in the case of intellectual adaptation, applies especially to individual human beings. It does seem likely that some species of animals (e.g., dogs or apes) exhibit behaviors strongly suggestive of intellectual adaptation beyond rudimentary practical intelligence, but it *is* beyond reasonable doubt that human beings exhibit powers of intellectual adaptation far greater any other creature on earth – especially in regard to *cognitive* intelligence.

Here we encounter a question that is answered very differently viewed epistemologically versus when it is viewed from ontology-centered ways of looking at things. The question is: are human beings born with innate concepts of objects? This question has bedeviled philosophers going at least all the way back to the opposing views of Plato and Aristotle, and it was perhaps the principal battleground between the ideas of British empiricism ("no innate ideas") versus those of continental rationalism ("innate ideas") – all of which philosophies are ontology-centered. For the empiricists, concepts were "impressions" that were "stamped into" the mind (Aristotle's "wax tablet" analogy or Locke's *tabula rasa* or "blank tablet"). For rationalists, some simply held that the mind was, to use a modern term, "preprogrammed" with innate concepts. Others held that many concepts were "impressed" on the mind, as the empiricists claimed, but were nonetheless given shape and form by innate "furnishings" of the mind – what Piaget called the idea of "preformed structures." But for both empiricists and rationalists, perceptions and concepts were "copies of reality" in some way, shape, or form. This is known as the "copy of reality hypothesis" and it suffers from a significant drawback: it is false. Modern scientific studies have established its falsity beyond reasonable doubt. Human beings are born utterly without any innate concepts of objects and no preformed *a priori* knowledge structures. But if this is so, then how are concepts and experience itself possible at all?

To understand this some clear terminology is needed. A *structure* is a system of self-regulating transformations such that: no new element engendered by their operation breaks the boundaries of the system; and the transformations of the system do not involve elements outside it. The system can have subsystems differentiated within the whole of the system and have transformations from one subsystem to another. *Structuring* is the act of putting into effect the operation of one or more of the self-regulating transformations in a structure. A *transformation* is an action in which one representation is changed into another representation. *Functioning* is the structuring activity whose structure constitutes the result or the organized event. A *function* is the unity of the act of ordering different representations under a common one.

To say a human being possesses no innate cognitive structures is not the same thing as saying a human being is incapable of structuring activity. The latter is a practical idea, an idea that "the mind does some-thing." Piaget found against the hypothesis of preformed structures and innate ideas¹, but he did conclude that the phenomenon of mind can be described and characterized in terms of intellectual functions: regulating functions that organize structures; and functions of assimilation and accommodation that modify and equilibrate them. These are, one should note, *mathematical* ideas. So are the ideas of Kant's Critical theory. As a scientist, Piaget had to stop short of offering explanations of *how* mental functioning worked. Kant, too, left us hanging in want of explanations and in this sense his Critical theory was incomplete. The principal contribution of Wells (2006), in my opinion, subsists in carrying Kant's theory forward from where he left it to a point where this "how" is better explained. The explanation begins with the synthesis in sensibility.

2. The Synthesis in Sensibility and Affectivity

The discussion now enters into territory: largely taken for granted by most people; that has been fought over by philosophers from the beginnings of philosophy; and treated by psychologists and neuroscientists in ways more nominal than explanative. This is the territory of what we commonly call sensation, sense, and sensibility. Psychology has nine different usages (not definitions) for the word "sense" and, as Reber & Reber (2001) put it, the word "sensible" is "unfortunately, used rather haphazardly . . . but is becoming increasingly rare" in the technical literature of psychology – a behavior that when engaged in by scientists usually indicates they have a less than satisfactory understanding of the topic being discussed.

¹ I should note that Piaget mistook Kant's categories of understanding to be *a priori* concepts (innate ideas). This is not what Kant meant, and by mistaking them as such – an error not at all uncommon – Piaget was misled into rejecting Kant's Critical theory on the ground that it was just another example of rationalism. It would have to be said Piaget was in good company here. Others making the same mistake include all the Neo-Kantians, William James, most philosophically-literate psychologists, and most philosophy professors. Kant himself can be blamed for this because, although he was widely regarded as a great conversationalist in his day, it is almost universally agreed that he was a terribly opaque writer. Kant himself even admitted his shortcomings as a writer. Philosopher C.E.M. Joad wrote, "His exposition is exceedingly obscure. . . . I do not think philosophy ought to be written as he writes it." [Joad (1936), pp. 359-360]



Figure 2: Logical structure of the synthesis in sensibility [Wells (2009), chap. 3].

Biology, to its credit as a science, doesn't use *any* of these terms as words in its *technical* vocabulary at all [Thain & Hickman (2004)]. Biologists confine themselves to speaking of neural receptors and other objects of sensible biological experience – as dead matter scientists should – and trust people's everyday notions of what "sense," etc. mean to provide context for phenomena biologists treat technically. This is entirely appropriate because the objects referred to by the words "sensation," "sense," and "sensibility" are supersensible objects – noumena. This is, perhaps, one of the interesting ironies of Kant's Critical Philosophy: "sense" is not *itself* sensible [Wells (2006), chap. 6].

Let us define a few key terms. Sensation is the matter of a perception and that in perception which is subjective in its representation. Sense is the capacity to present sensations. Sensibility is the sensuous representation of an effect, the cause of which is attributed to the capacity of receptivity and/or to the synthesis of re-production in imagination. Figure 2 illustrates the logical structure of the process of making such a sensuous representation. This process is called *the synthesis in sensibility* and is discussed in more detail below. Sensuous in this context means that a representation contains sensation as its matter of representation regardless of the form of the representation. Perception is the *making* of an empirical representation with consciousness. We also use the word "perception" to refer to that which is made by this mental act, although it is better to make these two different things distinct by giving the latter its own distinct technical term to be used when which of the two being talked about is not clear from the context of what is being said. I have previously coined the term *parástase* (Greek for "depiction") to mean the determined outcome or "depiction" of a noetic act of representation.

As for the term "consciousness," psychology vaguely and variously uses this word to refer to a state of awareness, a "domain of mind" that contains sensations, perceptions, and memories, and two other equally impractical usages. To put it bluntly, "consciousness" as used in psychology is just a catch-all phrase that means different things to different psychologists – another legacy of the influence of 19th century positivism on the origins of psychology as a science. Reber & Reber remark,

The term [consciousness] has a distinctly checkered history. It has sometimes represented the central focus of psychology and at others has been banned from the psychologist's lexicon as representing nothing more than the epiphenomenal flotsam of bodily activity. [Reber & Reber (2001)]



Figure 3: Mathematical structure of the faculty of pure consciousness [Wells (2006), chap. 5].

The difficulties psychology has with the idea of "consciousness" arise directly from the ontology-centered pseudo-metaphysical hodgepodge of how its practitioners "look at the world." Critical metaphysics, in contrast, provides a practical *Realerklärung* for the term. *Consciousness* is the general term for the power of a human being to represent the *Dasein* of representations. This term is regarded as the combination of empirical consciousness (as the matter in the structure of the power of consciousness) and pure consciousness (as the form of the structure of the power of consciousness). Kant described it informally as "the representation that a representation is in me" [Kant (1800) 9: 33], [Wells (2006), chap. 5].

One can call consciousness a representation of the second order because its object is a *parástase* of sensibility. Consciousness is, at root, a practical but mathematical idea. The logical representation of the capacity for organizing perceptions is called the faculty of pure consciousness and its formal structure is depicted in figure 3 above [Wells (2006), chap. 5].

Let us return now to figure 2 and discuss the synthesis in sensibility. The quantities depicted in this figure are all secondary quantities of Slepian's Facet B. The principal quantity to which they connect is the phenomenon of conscious apprehension of perceptions, a topic covered by Critical Aesthetic². Of all the various objects depicted in the figure, only two are ever represented with consciousness: *intuitions* and *affective perceptions*. Concepts are rules for the reproduction of intuitions. We do not perceive concepts; we perceive the intuition which is reproduced (as an act of *reproductive* imagination) or which is produced (as an act of *productive* imagination) or which is includes contributions from reproduced concepts. An intuition is a *parástase* of an object of appearance. An affective perception is a conscious representation that can never be made part of an intuition. *Affectivity* is the logical division of sensibility dealing with affective perceptions; *cognition* is the logical division of sensibility dealing with affective perceptions.

I think it is important to stress that the division between affectivity and cognition is merely *logical*. The representation in sensibility is a process by which a unity of affection is transformed into pluralities that we designate as "feelings" and "cognitions" through an intellectualization by which we classify and try to understand mental phenomena. The synthesis of apprehension in sensibility is logically describable as a process of making divisions of a whole of *materia sensibus* into particularities we call objective and subjective representations. By *materia sensibus* I mean the obscure representation of sensible *information* as it enters the synthesis of sensibility. This matter comprises the *materia ex qua* ("matter from which")

² The doctrine of the laws of sensibility is called aesthetic; the science of the laws of sensibility is called Aesthetic.

³ "matter." Kant uses this term in its Latin connotation of "the condition whereby an action or situation is effected." *Materia per se* is always a noumenon connected by human understanding in a relationship of condition-to-conditioned.

and *materia circa quam* ("matter around which") from which the synthesis in sensibility produces perceptions. *Materia sensibus* presented *in a parástase* is termed *materia in qua* ("matter in which"). By *materia circa quam* I mean matter participating in the act of determination by which something is given form. By *materia ex qua* I mean the *determinable* matter out of which sensations and feelings are made. By *materia in qua* I mean matter as the subject of inherence, i.e. *determined* matter.

Scientists and laypersons alike have a powerful habitual inclination to reify theoretical objects. It is a natural outgrowth of the naive realism we all start off with in life. This is why I emphasize so heavily the essentially mathematical character of what figure 2 represents. The significance accorded to these objects is epistemological; they have no ontological significance whatsoever. If the word "intent" is used in its dictionary connotation of "the state of mind with which an act is done," the epistemological homogeneity of *materia sensibus* can be likened comparably to what Santayana said about intent:

Intent is one of many evidences that the intellect's essence is practical. Intent is action in the sphere of thought; it corresponds to transition and derivation in the natural world. Analytic psychology is obliged to ignore intent, for it is obliged to regard it merely as a feeling; but while the feeling of intent is a fact like any other, intent itself is an aspiration, a passage, the recognition of an object which not only is not a part of the feeling given but is often incapable of being a feeling or a fact at all. What happened to motion under the Eleatic analysis happens to intent under an anatomizing reflection. The parts do not contain the movement of transition which makes them a whole. Moral experience is not expressible in physical categories, because while you may give place and date for every feeling that something is important or is absurd, you cannot so express what these feelings have discovered and have wished to confide to you. The importance and absurdity have disappeared. Yet it is this pronouncement concerning what things are absurd or important that makes the intent of those judgments....

Feelings and ideas, when plucked and separately considered, do not retain the intent that made them cognitive or living; yet in their native medium they certainly lived and knew. If this ideality or transcendence seems a mystery, it is such only in the sense in which every initial or typical fact is mysterious. Every category would be unthinkable if it were not actually used. [Santayana (1906), pp. 172-173]

The different uses to which *materia sensibus* is put by the synthesis in sensibility are profoundly important in their consequences. Critical Aesthetic leads to a very important conclusion – controversial in ontology-centered psychology but apodictic in epistemology-centered Critical theory – namely, *affectivity drives cognition*. This thesis was the topic of a hot debate carried out in *American Psychologist* between Lazarus [Lazarus (1984)] and Zajonc [Zajonc (1980)] in the 1980s. At the time, the question was left unresolved by their debate, although popular opinion among the readership seems to have sided more with Lazarus. The Critical doctrine of the phenomenon of mind, while not endorsing all of Zajonc's opinions, does come down on the side of his thesis that "preferences need no inferences," and against the antithesis championed by Lazarus. Interestingly enough, this outcome was presaged by Santayana:

Knowledge accordingly is belief; belief in a world of events, and especially those parts of it which are near the self, tempting or threatening it. This belief is native to animals, and precedes all deliberate use of intuitions as signs or descriptions of things . . . The images in sense are parts of discourse, not parts of nature; they are the babble of our innocent organs under the stimulus of things . . . The truth which discourse can achieve is truth in its own terms, appropriate description: it is no incorporation or reproduction of the object in the mind. The mind notices and intends; it cannot incorporate or reproduce anything not an intention or an intuition. [Santayana (1923), pg. 179]

Belief and faith both belong essentially to affectivity. Notice is perception. Intent, in the connotation stated above, belongs to the cycle of judgmentation in the service of the categorical imperative of Reason.

Information flows into sensibility from four sources, as shown in figure 2. Sensory data from the classic

Aristotelian "five senses" (seeing, hearing, touching, tasting, and smelling) and kinaesthetic feedback from the body's internal sensory modalities (balance, temperature, pain, itch, posture, and striated, cardiac and smooth muscle movement and tension) enter via the capacity for receptivity in the logical division of *psyche* and constitute what Kant called the data of experience [Kant (1787) B: 323]. *Parástase* of cognition are reintroduced from the manifold of concepts, via the synthesis of reproduction, from determining judgment. Lastly, the process of reflective judgment introduces what is best called *perception control information* for reasons I now explain. Perception-governing information *enforce principles* rather than *produces* parástase. Kant called them "pure fundamental notions of reflection." He tells us,

There are pure fundamental notions of intuition or of reflection; the former are principles of appearances, the latter of insight; the former display coordination, the latter subordination. [Kant (1764-68) 17: 372]

We find the explanation of what Kant means here by "coordination" and "subordination" in his Inaugural Address of 1770:

Form consists in the coordination, not in the subordination, of substances. Coordinates are mutually related as complements forming a whole; subordinates as cause and effect or, in general, ground and consequent. [Kant (1770) 2: 390]

Information inflow into sensibility from the process of reflective judgment stands in the place of a cause for which affective perceptions and intuitions are effects. This is nothing else than a control function.

In regard to the formation of intuitions, one function of informative inputs from reflective judgment is that of coalescing *materia sensibus* into "complements forming a whole." If by a circumlocution we seek to get by analogy a "picture" of this affective mental act, we can scarcely do better than to picture it as a sort of mental accretion process, as figure 4 below illustrates, in which the reflective information plays the part of a kind of "mental gravity." Kant's great stature as a philosopher tends to overshadow the fact that he began his career as a scientist and was the first to propose what later came to be known and accepted as the "nebular hypothesis" of the formation of the solar system [Kant (1755)]. The affective mental process as the intuition takes form is describable in a way similar to how William James described what he called "feelings of tendency" [James (1890), vol. I, pp. 249-255].

As for "information," this object is a noumenon. Mathematically, information is that which is persistent in different but equivalent data representations⁴ (e.g. "dog" in English and "*der Hund*" in German; or "18" in Arabic numerals and "XVIII" in Roman numerals). It makes its explanatory connection to Slepian's facet A through the Latin word *informatio*, the act of giving a shape to, fashioning, or forming (in this case) a mental representation.



Figure 4: Accretion model analogy of materia sensibus (left) coalescing into an intuition in sensibility (right).

⁴ Data representations are sensible; information is supersensible.

In the synthesis in sensibility there are four distinct mathematical processes necessary for the possibility of experience as human beings come to know it. These are: *Comparation, Reflexion,* Abstraction, and the synthesis of pure intuition. The first three, collectively, comprise what Kant called the *Verstandes-Actus* or "acts of understanding." The fourth is subdivided into what Kant called the form of outer sense and the form of inner sense. These processes are all subjective processes; there is no "copy of reality" mechanism in the synthesis in sensibility. As Kant put it in his famous Copernican hypothesis, "objects must conform to our cognitions" (epistemology-centered metaphysics) rather than the other way around (ontology-centered metaphysics) [Kant (1787) B: xvi]. The discussion before you at this moment pertains to the "mathematical machinery" by which this conformity is effected and summarizes Wells (2009), chap. 3.

Kant took the term *Comparation* from an obsolete English word. It refers to logical comparison of the *materia ex qua* of *materia sensibus*. He described it as "the comparison of representations [*parástase*] to one another in relationship to the unity of consciousness" [Kant (1800) 9: 94]. The specific relationship is that of *association. Comparation* is the act in the synthesis of apprehension by which *parástase* are either associated or not-associated in sensibility through a sense of satisfaction or dissatisfaction. It is important to know that in Critical terminology "satisfaction" (*Wohlgefallen*) carries the connotation that something is "not-bad." "Dissatisfaction" carries the connotation that something is "not-good." Bad and good are ideas that pertain to appetition in practical Reason, and so to say such an association of *materia ex qua* is "not-bad" means it is judged to be possibly inexpedient for the categorical imperative; to say it is "not-good" means it is judged to be possibly inexpedient for the categorical imperative. However, all that the act of *Comparation* does is gather together *materia sensibus* and present this gathering for judgment by the process of reflective judgment. Sensibility does not judge at all; it forms, it molds, it puts together (accretes) *materia sensibus* but it does not *judge* or approve its own compositions.

There is another more subtle connotation involved in this. Association by the act of *Comparation* is not association *with an object of appearance* but, rather, association by expedience or inexpedience *for the categorical imperative*. This is an entirely *subjective* function. Kant said,

The subjective representation of the power of life to receive or exclude objects is the relationship of satisfaction or dissatisfaction. Thus the feeling is not the relationship of the object to the representation but rather to the collective power of mind, either to most intimately receive or to exclude the same. [Kant (1777-80) 28: 247]

The process of *Comparation* begins gathering up and coalescing *materia in qua* for possible intuitions of objects but does so entirely according to subjective judgments (by reflective judgment) that are entirely free of all *objective* connotations. In purely mathematical terms, *Comparation* is the synthesis of what mathematicians call *equivalence structures*. It was asked earlier how human beings can come to acquire concepts of objects without having any innate ideas of objects whatsoever. *Comparation* is the first step in how this happens and it performs this function entirely affectively⁵.

Kant described reflexion as "consideration of how different representations can be comprehended in one consciousness" [Kant (1800) 9: 94]. He distinguished two kinds of reflexion. These were logical reflexion (with which *Comparation* as a function is paired) and material reflexion. The act of *Reflexion* in figure 2 is paired with this second kind of reflexion. In *Critique of Pure Reason* he wrote,

Reflexion does not have to do with objects themselves, in order to acquire concepts directly from them, but is rather the state of mind in which we first prepare ourselves to find out the subjective conditions under which we can arrive at concepts. It is the consciousness of the relationship of given representations to our various sources of knowledge, through which alone their relationship among themselves can be correctly determined. [Kant (1787) B: 316]

⁵ I think it is noteworthy and of interest to mention that recently the capability of neural networks to mechanically implement the function of *Comparation* was demonstrated for the first time by Sharma (2013).

Comparation ignores all material meaning and is concerned only with formal rules for making comparisons. *Reflexion*, on the other hand, is precisely concerned with material meaning and determines rules of comparison by linking *parástase* with mental abilities that produce and process them. But all material meanings are practical at their roots; in other words, the meaning of something is what can be done with it. The practical expedience of a sensuous *parástase* subsists in the congruence of its representation with actions of other parts of the noetic and psychic structure of mental phenomena (figure 5). In mathematical terms, this is to say that the act of *Reflexion* is the synthesis of what mathematicians call *congruence relations*. Kant did not have the benefit of this terminology in his day (because it hadn't been invented yet). Instead he called it harmonization (*Zusammenstimmung*), by which he meant the act of making diverse representations. In practice, this is what mathematicians do with their formal congruence relations and sets. *Reflexion* is the act of coalescence in sensibility that produces: harmonization of the free play of imagination and understanding; or aesthetic harmonization between sensibility and reflective judgment; or harmonization in the judgmentation loop overall (see figure 5).

Abstraction is the act of separating, segregating, and removing from representation all *materia ex qua* that differ in comparison with the *materia* that is coalescing into the final determined *parástase*. After the act of Abstraction, remaining *materia* is consolidated in the determined *parástase* to constitute its *materia*



Figure 5: The logical structure of noetic and psychic organization.

materia in qua. The excluded *materia* either coalesces into another intuition, or into matters of affective perception, or remains obscure and unperceived *materia ex qua* not made conscious at all. Abstraction is the act of segregating everything from a *parástase* by which the comparate representations going into the synthesis differ with regard to purposive expedience in making the representation. The act of Abstraction and the act of reflective judgment are co-determining acts in the free play of reflective judgment and the synthesis of apprehension in sensibility [Wells (2009), chap. 3].

Perhaps it seems obvious to you that Abstraction makes possible the phenomenon of Attention. Attention is the act whereby a *parástase* is made clear and conscious while others are kept unconscious (obscured). Abstraction is the actualization of Attention⁶. Unlike *Comparation* and *Reflexion*, Abstraction does not have a crisply defined counterpart in the standard lexicon of modern mathematics. The closest thing to it in the language of modern mathematics is the mathematical idea of "difference" [Nelson (2003), "difference"]. Abstraction (a non-judgmental act in sensibility) is adjudicated by acts of reflective judgment called transcendental anticipations. Critical *anticipation* is knowledge through which a human being can recognize and determine *a priori* what belongs to empirical cognition. *Transcendental* anticipation is anticipation in the form of knowledge *a priori* that is necessary for the possibility of making perceptions through the synthesis of reproduction. Because this synthesis is *a priori*, an act of anticipation in the combination of representations has the forward-looking character required for the determination of a practical representation (by pure practical Reason) of a determined practical purpose. The latter is called appetition [Wells (2009), chap. 3].

These three *Verstandes-Actus* of sensibility pertain to the representation of the matter of perceptions. But along with a matter of representation, every *parástase* likewise requires a form of representation. Of matter and form Kant wrote,

These are two notions that ground all other reflexion, so inseparably are they bound up with every use of understanding. [Matter] signifies the determinable in general, [form] its determination (both in the transcendental sense since one abstracts from all differences in what is given and from the way in which that is determined). . . . In every judgment one can call the given concepts logical matter (for judgment), their relationship (by means of the copula) the form of the judgment. In every being its components (*essentialia*) are the matter; the way in which they are connected in a thing, the essential form. [Kant (1787) B: 322]

Form is provided to perceptions in the synthesis in sensibility by the synthesis of what Kant called *pure* intuition (figure 2). Quite possibly this is the part of Kant's theory that gives people the most trouble to understand because it requires *absolutely* an epistemology-centered way of looking at the world. Most people harbor an ontology-centered way of looking at the world and you simply cannot correctly understand Kant's pure forms of intuition in ontological terms.

I won't hold you in suspense. *All* perceptions require a form of what Kant called inner sense. The proper name for this form of pure intuition is *the pure intuition of subjective time*. Subjective time is something altogether not the same as what we usually mean when we use the word "time." That usage is correctly called *objective* time, and it is a defined $Object^7$ of a *developed practical* idea, not an *a priori* one and certainly not an idea of any object of sensible appearance [Piaget (1927)]. Being ontology-centered, most people, including every living physicist I know, reify the idea of time and think time is a "thing" – and a

⁶ The word Attention, for which the real explanation is given here, translates Kant's technical term *Attention*. He also has another technical term, *Aufmerksamkeit*, which is also translated as "attention." This term means consciousness according to choice. *Aufmerksamkeit* is ratio-expression of type α compensations in judgmentation which oppose innovations that hinder the cycle of equilibration. This technical distinction between Attention and attention is an example of the sorts of things that make Kant's writings formidably challenging to English readers. The distinction isn't all that important for the purposes of this treatise and I use "attention" in both contexts here unless it becomes important to explicitly draw the distinction. In that case I revert back to Kant's appropriate German expression.

⁷ All *defined* Objects are Objects of mathematics, not empirical experience.

strange thing at that. People's descriptions of it basically amount to trying to say it is an *immaterial* material thing, apparently without stopping to think what rubbish "immaterial material thing" is. People, and especially physicists, often claim to base this notion on Einstein's Theory of Relativity, *but Einstein held no such view*. Based upon *epistemological* grounds, Einstein argued that the only objectively valid idea of "time" (that is, objective time) is a *practical* idea – that time is defined by *measurements* using clocks [Einstein (1905)]. I often get a feeling that people who blame Einstein for their own reification of objective time have never actually read one word of Einstein's famous paper. Einstein's theory prescribes rules that mathematical descriptions of nature *must* follow if a physical theory is to be valid [Wells (2006), chap. 21]. His paper contains not one word about *subjective* time.

Kant, too, can be faulted for not making the distinction between subjective and objective time clear. He did clearly enough tell us "time" is subjective (a pure form of intuition and affective perception); I can only speculate that he might have regarded objective time as too trivial a topic to bother with. Kant also seems to have thought his idea of subjective time was original, but in this regard he lost the publication race to Augustine of Hippo by the not-so-narrow margin of nearly 14 centuries [Augustine (c. 397-400)].

The practical *Realerklärung* of the synthesis of the pure intuition of subjective time is that this is the synthesizing in sensibility of what mathematicians call "order structures" [Wells (2009), chap. 3]. This is a mathematical idea and, for one adequately trained in mathematics, not a particularly difficult one. It can be rather formidable for people who do not have this training. The Bourbaki mathematicians of the 1950s proved that all mathematics can be reduced to three "mother structures" and their combinations. What is sublimely interesting is that Piaget's findings regarding children's development of their concepts of time and the Bourbaki's findings regarding their "mother structures" *are the same findings expressed in different words for different contexts* [Piaget (1970), pp. 23-26]. Order structures are one of these three mother structures, and the pure intuition of subjective time synthesizes them.

Chapter 3 of Wells (2009) provides an introductory explanation of mathematical order structures and the pure intuition of subjective time. Wells (2006), chapter 21, presents the full metaphysical treatment of the transcendental Aesthetic of time. For purposes of *this* treatise it will have to suffice to say that your every-day notions of time – e.g., its logical division as past, present, and future; the oft used description of time being like an arrow flying from the past to the present and on into the future; that nature in some way exists *in* time; that even logical structures contain the ideas of antecedent and consequent propositions; and all other such common notions of time order – are made possible for human experience by the synthesis of the pure intuition of *subjective* time in sensibility.

It is not correct to call past, present, and future the *modi* of time. The three epistemologically correct *modi* of time are *persistence in time*, *succession in time*, and *coexistence in time*. I think it is interesting to make note that Augustine's agonizing dialectic about the nature of time [Augustine (c. 397-400), pp. 263-280] is easier to comprehend in many ways than was Kant's treatment of it, though both men came to exactly the same conclusion: that we may speak of and use *subjective* time in real contexts but *objective* time as an Object *per se* is a mathematical noumenon beyond human experience. Augustine wrote,

It is in my own mind, then, that I measure time. I must not allow my mind to insist that time is something objective. I must not let it thwart me because of all the different notions and impressions that are lodged in it. I say that I measure time in my mind. For everything that happens leaves an impression on it, and this impression remains after the thing itself has ceased to be. It is the impression that I measure, since it is still present, not the thing itself which makes the impression as it passes and then moves into the past. When I measure time it is this impression that I measure. Either, then, this is what time is, or else I do not measure it at all. [*ibid.*, pg. 276]

Augustine led himself to this conclusion about the real subjectivity of time after having observed,

From what we have said it is abundantly clear that neither the future nor the past exist, and therefore it

is not strictly correct to say that there are three times: present, past, and future. It might be correct to say that there are three times: a present of past things, a present of present things, and a present of future things. Some such different times do exist in my mind, but nowhere else that I can see. The present of things past is the memory; the present of present things is direct perception; and the present of future things is expectation. If we may speak in these terms, I can see three times and I admit that they do exist. [*ibid.*, pg. 269]

Augustine presented himself a number of examples wherein, in a manner of speaking, he gave himself a seat on "time's arrow" and imagined "riding" along a timeline from the past into the future with "the present" represented as his particular "point" moving along this line. If you can imagine this "present point" sliding from left to right along this line, you can easily imagine the left side of the line ("the past") growing longer while the right side ("the future") grows shorter. But, as Augustine argued,

But how can the future be diminished or absorbed when it does not yet exist? And how can the past increase when it no longer exists? It can only be that the mind, which regulates this process, performs three functions: those of expectation, attention, and memory. The future, which it expects, passes through the present, to which it attends, into the past, which it remembers. No one would deny that the future does not yet exist or that the past no longer exists. Yet in the mind there is both expectation of the future and remembrance of the past. Again, no one would deny that the present has no duration, since it exists only for the instant of its passage. Yet the mind's attention persists, and through it that which is to be passes toward the state in which it is to be no more. [*ibid.*, pg. 277]

Nothing he says in any of the above contradicts Kant's own arguments in any way, and both men came to the same (albeit not very crisp) conclusion. Mathematics did not have the language in their days to express these ideas with precision and clarity (because the mathematical ideas that do so had not been invented yet) but this shortcoming was remedied in Wells (2006) and Wells (2009).

All perceptions contain forms of the pure intuition of subjective time, the intuition of inner sense. Cognitive intuition, which represents appearances of objects, goes one step further and contains a form of the pure intuition of outer sense. This additional form is called the pure intuition of *subjective* space.

I think it best to begin with this by first stating what it is not. It is **not**, as the Neo-Kantians and others presumed, any idea that human beings come endowed with an innate and *a priori* geometry. The idea of human beings innately possessing any such thing is demonstrably false [Piaget & Inhelder (1948)], [Piaget, *et al.* (1960)]. It is true enough that Kant's exposition tends to encourage – even strongly encourage – this misconception but, again, the mathematical language and ideas required for its proper exposition had not yet been invented in Kant's day and, unfortunately, this time there was no Augustine to express it in ways more accessible to laypersons. Kant's own descriptions were qualitative and dialectic.

It is again crucial to draw a distinction between the idea of subjective space and that of objective space. What I said earlier about contemporary physicists reifying the idea of time is also true about the idea of objective space. Popular presentations for laypersons in television science shows have a habit of talking about space and Einstein's theory as if the orbits of the planets or the propagation path of light followed some kind of magic railroad tracks. The impression this tends to convey is hogwash of the highest order. The problem, again, is ontology-centered pseudo-metaphysics. As with time, Einstein's theory was built upon epistemology-centered grounds and, again, his conclusion was that the only objectively valid way to understand objective space is *practical* – i.e., through the methods by which spatial relationships are measured [*op. cit.* Einstein (1905)]. The Theory of Relativity again prescribes *rules* that mathematical descriptions of spatial relationships *must* follow for a physical theory to be valid [Wells (2006), chap. 17].

Piaget, *et al.* (1960) lays out in fascinating detail the stages little children go through in coming to *construct* our familiar notions of geometry little by little, providing numerous observations of how small children carry out their constructions. This psychological evidence all by itself is enough to dismiss any notion that the pure intuition of subjective space is an innate geometry. However, the very fact that little

children *exhibit the capability* to undertake such a construction at all tells us something *necessary for the possibility* of this must exist in the phenomenon of mind. This something is, of course, what Kant called the pure intuition of space, but what is the nature of this? What does one need to *build* geometric ideas?

Because all constructions implicitly require acts of some kind, and because these acts are expressed in the actions of a young child, this question is *practical* and so can be studied empirically. When it was, the results were as follows:

It is therefore necessary . . . to try to reconstruct the spatial relations which arise in primitive or rudimentary perception (e.g., in the exercise of the reflexes of sucking, touching, seeing patches of light, etc., and the earliest habits superimposed on these reflexes). But since these initial perceptions fail to attain constancy of size and shape, what sort of relations go to make up such a space?

1. The most elementary spatial relationship which can be grasped by perception would seem to be that of 'proximity', corresponding to the simplest type of perceptual structurization, namely, the 'nearby-ness' of elements belonging to the same perceptual field....

2. A second elementary spatial relationship is that of *separation*. Two neighboring elements may be partly blended and confused. To introduce between them the relationship of separation has the effect of dissociating them, or at least of providing the means of dissociating them. But once again, such a spatial relationship corresponds to a very primitive function; one involved in the segregation of units, or in a general way, the analysis of elements making up a global or syncretic whole. . . .

3. A third essential relationship is established when two neighboring though separate elements are ranged one before another. This is the relation of *order* (or spatial *succession*). It undoubtedly appears very early on in the child's life . . .

4. A fourth spatial relationship present in elementary perception is that of *enclosure* (or *surrounding*). In an organized series ABC, the element B is perceived as being 'between' A and C, which form an enclosure along one dimension....

5. Lastly, it is obvious that in the case of lines and surfaces there is right from the start a relationship of *continuity*. [Piaget & Inhelder (1948), pp. 6-8].

These primitive spatial relationships are none other than those which go into what mathematicians call "topology" [Wells (2009), chap. 3]. Mathematicians regard topology as the part of mathematics that comprises the basic information that goes into the making of geometric structures. Direct observation shows that by age 5 or 6 weeks, babies are exhibiting in behaviors (e.g., smiling at its mother) that the baby is capable of recognition; by age 2 days, a baby demonstrates the ability to distinguish by touch between its mother's nipple and surrounding teguments [Piaget (1952), pp. 25-29]. All this is to say that the baby's most primitive spatial perceptions are topological. Quite notably, topological structure is also one of the Bourbaki mathematicians' "mother structures" [*op. cit.* Piaget (1970)].

However, it is incorrect to say that human beings are born in possession of any innate topology. Instead we are born with the capability *to synthesize topological structures*. And that is what the pure intuition of subjective space is: the *structuring*, not the structure itself, of topological spaces⁸ [Wells (2009), chap. 3], [Wells (2006), chap. 17].

3. Reflective Judgment and Animating Psyche

One can say the synthesis in sensibility assembles the parástase of possible perceptions but it does not

⁸ One of the things I find curious enough to call "odd" is that, although mathematics has a great deal to say about topological structures, it says nothing (at least not yet) about *how to structure* a topology. The study of topology in mathematics books and college courses begins by *giving* you a topology and having you go from there. Obviously mathematicians can *make* topologies – they do it all the time – but do not appear to be conscious of *how* they do it, nor have they developed any systematic theory of how to do it. It is a hole in mathematics I find quite puzzling.

judge which of these are to receive the mark of consciousness nor, indeed, does it judge anything at all. Sorting sensibility's preconscious representations into those that get *made* perceptions (intuitions and affective perceptions) and those that remain obscure is tasked to the process of reflective judgment. The judgments rendered by the process of reflective judgment are entirely *subjective* judgments. By this I mean judgments in which the subject of the judgment is an inner affective state of a person. This state is what we are talking about when we use the word "me" with words like emotion, likes and dislikes, anxieties, drives, longings, and a host of other expressions people use when trying to describe their own psychological accidents of *Existenz* to other people.

Reflective judgments are *essentially* non-ontological. By this I mean they are judgments that are never made part of one's cognition of an object. Everyone "knows what an emotion is" until they try to *explain* what an emotion is. Then one discovers that "feelings" and "emotions" are *essentially* autistic, i.e., they cannot be adequately put into words and communicated to other people. When we try to communicate them we find ourselves resorting to similes and metaphors (e.g., "cold disdain" or "tender love") and relying upon others' empathy for success in conveying what we mean. Perhaps no truer sentence has ever passed through human lips than the statement, "*You* don't know how *I* feel." In all fairness, I have to say a skilled poet has a keener apprehension of affectivity than a psychologist because a poet's vocation is to impassion and move people by using words to stimulate others' affections, whereas psychologists cannot even find universal agreement as to what "emotion" means [Reber & Reber (2001), "emotion"]. In fairness to psychologists, I'll add to this the remark that affectivity has also befuddled philosophers since the beginning of philosophy. If the religious idea of a human soul could be said to have a valet, it would be affectivity.

But as ontologically formidable as the phenomenon of human affectivity is, it is epistemologically indispensable because reflective judgments constitute the very core of what I earlier called subjectively sufficient reasons. All beliefs are grounded in reflective judgments and faith has no other authority as its author. For centuries scientists went to great lengths to treat affectivity as a taboo topic – and, really, in science this attitude has only started to shift significantly in the last few decades. For one whose way of looking at the world is ontology-centered, affectivity must be understood by tying it to a special object (e.g., "the limbic brain"), but affective perceptions and affectivity are inherently non-ontological.

In light of this, it seems to me unremarkable that Kant also struggled with this topic. He makes references, remarks, and comments about it throughout the Kantian corpus, but in the end his treatment of it has to be called unsystematic and unsatisfying. The proper Standpoint for treating it is the judicial Standpoint of Critical metaphysics, and objective validity for concepts about it can only be practical objective validity. Nonetheless, Kant left breadcrumbs (metaphorically speaking) for us to gather up, assemble, and organize into a systematic Critical doctrine in the light of two centuries of later scientific and mathematical discoveries. This task takes up four lengthy chapters in Wells (2006) – specifically, chapters 14, 15, 16, and 18. A condensed systematic exposition of these findings is provided in chapter 7 of Wells (2009) with additional material found in its chapters 4, 8, 9, and 11. It is not practical to repeat all this here in this treatise, but it is possible and necessary to tease out and present key ideas and findings – ones that are pertinent and important to Critical theology – in summary form.

Referring once more to figure 5, reflective judgment occupies a place in the organization of mental structure between the synthesis in sensibility and expression (*psyche* and practical Reason). This means that, on the one side, reflective judgment adjudicates sensibility in accordance with aesthetic laws of sensibility and, on the other side, it adjudicates impetuous action expressions insofar as these actions are conditioned by sensibility. Its overall function can thus be called *sensorimotor judgment*.

Now, Critical epistemology requires this mental organization to coexist with the organic structure of the body (no real mind-body division). This is called the principle of *nous-soma* reciprocity. Today we know there *is* such a coupled anatomy of sensory inputs, motor networks, and cortical processing of sense and motor signals in the human brain (figure 6 and its caption), just as Critical theory requires.

neocortical columns



Figure 6: Organization of sensory-thalamo-cortical-motor network cross coupling in the human brain. Sensory signals from the body's peripheral nervous system are relayed by the thalamus to the neocortex, which in return signals back to the thalamus and to motor cortices that produce signals to actuate the body's systems of muscles and glands [Sherman & Guillery (2006), chap. 10]. The principle of *nous-soma* reciprocity in Critical epistemology predicts and requires that some neural organization like this must exist in the anatomical organization of the brain. The discovery of its actual *Existenz* in brain structure is one of the significant findings of empirical neuroscience research that brings together Facet A objects and Facet B principal quantities of the phenomenon of mind. The top row of the figure depicts the layered organization of the neocortex (which, among other things, processes sensory input information). The thalamus relays or blocks these signals from reaching the neocortex and, therefore, can be hypothesized to have a role in consciousness. The premotor cortex and motor networks in the brain stem process and send out signals that travel to the body's muscle system and actuate physical (motoregulatory) expressions.

The Janus-like character of the process of reflective judgment naturally enough suggests making a logical division of its functions into a division that adjudicates sensibility and one that adjudicates motor expression. These two logical divisions are called, respectively, *aesthetical* reflective judgment and *teleological* reflective judgment [Wells (2009), chap. 7]. Detailed analysis of these processes leads to a three-level analytic representation (3LAR) of the organization of reflective judgment. Figure 7 depicts this 3LAR structure. Figures 8 and 9 illustrate the organization and names of the synthesizing functions of aesthetical and teleological reflective judgment, respectively.

One can obtain a qualitative appreciation for what sort of judgments are rendered by reflective judgment from an examination of figures 8 and 9. The matter of a reflective judgment is called *desire* and is understood as consisting of an associated combination of affective perceptions. The form of a desire is called a *value*. Explanation of the matter of a desire employs a German word that doesn't translate into English. The word is "loost" and it is spelled *Lust*. It has become a tradition in translating Kant to substitute the dainty Victorian-era word "pleasure" in place of *Lust* but this is a total mistranslation. *Lust* is not the same thing that is meant by the English word lust. The latter derives from Anglo Saxon rather than from High German. The connotation of *Lust* is that of a kind of motivated wanting, the notion of which is captured in the American colloquialism, "I'm up for that." Similarly, its opposite, *Unlust*, has the connotation of a not-wanting. (I note in passing that Sigmund Freud also made frequent use of the words *Lust* and *Unlust*, and English translations of these as pleasure and pain are equally erroneous renderings).



Figure 7: 3LAR organization of the process of reflective judgment in terms of aesthetical reflective judgment and teleological reflective judgment. Each of the four headings (Quantity, Quality, Relation, and Modality) for both aesthetical and teleological reflective judgment contain three synthesizing functions (*momenta*) for a total of 24 *a priori momenta* in reflective judgment overall [Wells (2009), chap. 7, chap. 8].



Figure 8: 2nd level analytic representation (2LAR) of the momenta of aesthetical reflective judgment.



Figure 9: 2nd level analytic representation (2LAR) of the momenta of teleological reflective judgment.



Figure 10: 3LAR structure of Lust per se in the logical division of psyche [Wells (2009), chap. 4].

The matter of desire is what Kant called the *feeling of* Lust or Unlust [Wells (2006), chap. 15], [Wells (2009), chap. 4]. Strictly speaking, the ideas of *Lust* and *Unlust* belong to the logical division of *psyche* in the theory of the phenomenon of mind and pertain to the fundamental ability, through mind-body (noussoma) reciprocity, for a human being to adapt himself to achieve a state of equilibrium. Kant referred to this ability as the facultatem locomotivam or "power of locomotion" [Kant (1794-95) 29: 1027]. Figure 10 illustrates the 3LAR logico-mathematical structure of Lust per se. Lust and Unlust can be regarded as action orientations. Lust and Unlust taken together and regarded as a unity is called Lust per se. This is logically divided into two practical dimensions as shown in figure 10: an adaptation dimension and an organization dimension [Wells (2009), chap. 4]. Lust per se is a fundamental property of psyche's animating principles and is not itself a feeling or sense. The feeling of Lust per se is an affective perception adjudicated by reflective judgment. The *momenta* of aesthetical reflective judgment in figure 8 are all "oriented" by whether the animation of *psyche* is a promoting (*Lust*) or a hindering (*Unlust*) orientation. For example, referring to figure 8, one can feel a sense of satisfaction (orientation of Lust) or a sense of dissatisfaction (orientation of Unlust). The labels in figure 8 are named for Lust orientations but implicit in this figure are also opposite orientations (dissatisfaction, denial, disinterest, unhappiness) depending on whether the orientation in *psyche* is that of *Lust* or *Unlust*.

Aesthetical reflective judgment is concerned with the synthesis of desire and consciousness of the feeling of *Lust* or *Unlust* in affective perception. Its judgments pertain to the effects on a person of the data of receptivity and *materia sensibus* reintroduced into the synthesis in sensibility by imagination from concepts. These effects are what philosophers mean by saying a person is a *patient* in relationship to his environment. But human beings also express spontaneous actions that effect changes to that environment. This is what philosophers mean by saying a person is an *agent* in relationship to his environment⁹. The division of reflective judgment pertaining to the agency of a human being is teleological reflective judgment. Each of the twelve functions depicted in figure 9 is a *causatum*, i.e., a rule for determination of a change under the condition of a cause. That cause in this case is the fundamental acroam¹⁰ governing the process of reflective judgment; it is called the principle of formal expedience of Nature [Wells (2009), chap. 8], [Kant (1790) 5: 181-186].

Explanations for each of the functions in figure 9 is found in Wells (2009), chapter 8. In this treatise I limit the discussion to describing what the four heads (Quantity, Quality, Relation, and Modality) in

⁹ In philosophical terminology, the object of the idea of a patient is an object predicated to contain the *effect* of a *cause*. An agent is an object predicated to contain the *cause* of an *effect*.

¹⁰ An acroam is a fundamental principle of Critical metaphysics.

figure 9 are referring to. Teleological reflective judgments are acts synthesizing a *nexus* of desires. Kant called this *nexus* "desiration" (*Begehrung*; one modern translation of this word is "coveting" but that is not what Kant means when he uses it as a technical term). In logical terms, desiration is the form of a unity of affective perceptions. In judicial terms, it is the determinable in motoregulatory expression. So viewed, desiration is the representation of a possible appetite (of practical Reason) as a rule judged to be satisfactory for formal expedience by the act of reflective judgment¹¹. Taken together in combination, desire (a matter) plus desiration (a form) is called a Desire (capitalized). The multiplicity of Desires represented by reflective judgment is called the manifold of Desires (figure 5). Unlike the manifold of concepts and the manifold of rules, the manifold of Desires is not a *structure* because it is not conserved. What I mean by this is that it is not given any permanence of form; rather, it is *reassembled* moment by moment as the synthesis of apprehension is carried out in sensibility. If the manifold of Desires were to be conserved, affectivity and action expression would quickly become rigidly stereotyped. Non-conservation of Desires is a very necessary feature for without it the process of reflective judgment would be unable to carry out its task as the bridge between understanding and Reason.

The functions of Quantity and Quality in teleological reflective judgment (reflective Modality in terms of a 2LAR of reflective judgment overall) are called *functions of implication* and are subdivided into extensive functions and intensive functions. Any act of judgment assimilating perception into an action scheme¹² is called a *meaning implication* and every act of teleological judgment attempts precisely such an assimilation [Wells (2009), chap. 8]. The extensive functions of implication determine what we can call a "focus" or "focal point" of action expressions, whether this focal point is an action scheme, an effect on sensibility by means of kinaesthetic feedback (figure 2), or in organizing divers practical meanings. The intensive functions of teleological reflective judgment serve a demand for happiness in one's state of being and to regulate the constitution of empirical meanings [*ibid*.]. These are the roles implied by the terminology used in figure 9, i.e., functions of real *tendency*, real *repugnancy*, and real *significance*.

The functions of Relation and Modality in teleological judgment (reflective Relation in terms of overall reflective judgment) are called the judicial functions of *persuasions* and *preferences*, respectively. The technical explanations of these functions are, again, found in Wells (2009), chapter 8, but the "flavor" of these functions is, I think, well reflected by the words persuasions and preferences. Human beings are not born with any innate concepts of objects, but we do come into this world with an innate ability to be persuaded to believe something, and with innate preferences regarding our affective states of being.

Persuasion is an affective state of holding-to-be-true grounded only in the particular constitution of the Subject (person) but in which the subjectivity of this ground for holding-to-be-true is mistaken to be objective. For example, suppose you come across a large ugly looking man with a scar on his face who is dressed in street gang colors. Suppose further that you experience a fear reaction in this encounter even though the man makes no overtly threatening or menacing moves. Your fear reaction is a persuasion but, most likely, you will *transfer* this reaction *to* the man and regard *him* as the cause of your fear. For this particular example, the persuasion is one you acquired through experience (the manifold of concepts contributes to sensibility) rather than an innate one, but other affective reactions (e.g., startle responses to sensuous stimulation) appear to be innate to human nature. For example, a baby will respond to a sudden loud noise by crying even though the baby has utterly no objective concept of anything that could give it a *reason* to cry. It will respond to its mother's tender embrace and gentle voice by "being comforted." The functions of Relation in teleological reflective judgment are the grounds for phenomena of persuasion. All *beliefs* are products of acts of persuasion.

Human beings also exhibit a capacity for innately determining preferences. A preference is an affective perception insofar as this perception is part of the determination of sensorimotor expression through

¹¹ Whether or not a *possible* appetite is made an *actual* appetite is not up to reflective judgment. That determination falls to the processes of appetition and practical judgment in practical Reason.

¹² A scheme is that which can be repeated and generalized in an act or action.

teleological reflective judgment. However, it is incorrect to presume the preferences of judgment in figure 9 are constituted by some innate catalog of relative likes and dislikes (e.g., "carrots taste better than dirt"). The Latin root of the English word "preference" is a *verb (praefero)* meaning "to attach more value to." The correct context to use for Modality in teleological reflective judgment is the context of action, and, in particular, mental action that "attaches" a value (the form of a desire) with an expression, either a physical action expression (motoregulatory expression) or an act of reasoning (ratio-expression in figure 5).

Objectively, belief is holding-to-be-true; but reflective judgment is an affective process and teleological reflective judgment is an action-oriented process governed by the principle of formal expedience of Nature. Viewed from the judicial Standpoint of reflective judgment, the idea of belief is an idea synthesizing a union of cognition and practical action. This is to say that, judicially, belief is holding-to-be-*binding. Cognitive* belief is a byproduct of what we can call *practical* belief. As Modality functions, the preferences of judgment pertain to relationships between the manifold of Desires and the person who makes these representations. Preferences of judgment are functions for synthesis of aesthetical holding-to-be-binding in the unity of the *I* of transcendental apperception [Wells (2006), chap. 18].

Cognitive beliefs come out of this synthesis rather than condition it. Kant wrote,

Belief is no special source of knowledge. It is a type of incomplete holding-to-be-true with consciousness, and, when it is regarded as restricted to a special class of Objects . . . distinguishes itself from opinion not through degree but through the relationship it has to knowledge for acting . . . Now we have theoretical knowledge (of the sensuous) in that we can bring it to certainty, and in consideration of all that which we can call human knowledge, the latter must be possible. We have just such certain knowledge, and indeed completely *a priori*, in practical laws, although these are grounded in a supersensible principle (freedom) and indeed in ourselves as a principle of practical reason . . . Nonetheless, nature as an Object of our theoretical reason must agree with it, for in the sensible world the consequences or the effect of this Idea shall be met with . . .

Between the obtainment of a cognition through experience (*a posteriori*) and through reason (*a priori*) there is no mediator. But between cognition of an Object and the mere presupposition of its possibility there is a mediator, namely an empirical ground or a ground of reason to accept the latter in regard to a necessary expansion of the field of possible Objects above those whose cognition is possible for us. This necessity takes place only in respect of that in which the Object is known as practical and practically necessary through reason, for to accept something on behalf of merely expanding theoretical knowledge is always contingent . . . This is a subjective necessity, to accept the reality of the Object for the sake of the necessary determination of will. This is the *casus extraordinarius*¹³, without which practical reason cannot support itself in regard to its necessary purpose, and here a *favor necessitatis*¹⁴ proves useful to it in its own judgment. It can acquire no Object logically, but only set itself against that which hinders in the use of this Idea which practically belongs to it. [Kant (1800) 9: 67-69fn)]

This practical underpinning for all beliefs can have none but *non*-cognitive functions for its synthesis. These are what the functions of preferences of judgment are. They are effected by means of what Piaget called "coordinator functions" – functions that link successive actions deriving from the same action scheme [Wells (2009), chap. 8]. The syntheses are *acts of harmonization* in which teleological reflective judgment is in free play with the synthesis of apprehension in sensibility (presupposing judgments), the synthesis of imagination in cognition (demanding judgments), or synthesis in judgmentation overall in reasoning (requiring judgments) [*ibid.*]. Because these functions of teleological reflective judgment logically precede both cognitions of any object and determinations of appetition in practical Reason, they do indeed merit being called *momenta* of necessitated *biases* of affective judgment (*favor necessitatis*).

In all three cases Modality in teleological reflective judgment aims at establishing reequilibration after a

¹³ supplementary (or additional) circumstance.

¹⁴ necessitated bias.

disturbance to equilibrium [*ibid*.]. Presupposing judgments aim at the establishment of equilibrium of any kind. No factor of cognition is involved yet because conditions for cognition are not yet satisfied. The technical term for this type of preference is *phoronomic* preference because it is concerned with schemata¹⁵ of change (*kinesis*) in a person's Self-determinations regardless of what kind of change.

Demanding judgments aim at assimilation of the form of sensibility into an action scheme. In this Modality, sensibility is an aliment of action, i.e., sensibility "feeds" action response, and the attention of the person is drawn to specific content in sensibility. The technical term for this kind of preference is *dynamic* preference because it involves the person's power to spontaneously be the cause of a change in his external relationships. Harmonization of reflective judgment and the free play of imagination always involves production of intuitions in sensibility, and *here we have the beginning condition for cognition* (although not yet a sufficient condition for *cognizance*, i.e., the transformation of an intuition into a concept).

Requiring judgments aim at accommodation of an action scheme in order to assimilate a presentation in sensibility. This accommodation is conditioned and bound by a necessitation of practical Reason (hence it involves the entirety of the judgmentation loop of reflective, practical, and determining judgments in figure 5). The technical term for this type of preference is *mechanics* preference because it involves the interactions between all three processes of judgment (reflective, practical, and determining)¹⁶. Requiring judgments mark the fulfillment of all the conditions for cognition in understanding and so *this Modality of teleological reflective judgment is the judicial act wherein affectivity drives human cognition*.

This finding of Critical epistemology is so opposite of how theorists have always thought about human knowledge that this idea is one you might regard as startling and, possibly, quite difficult to accept. If so, you are in good company. At this point I hope you are beginning to appreciate what it is about the human nature of affectivity that makes possible cognition of objects and understanding of empirical nature that would otherwise only be possible if human beings were born with innate ideas and some copy-of-reality mechanism – two things scientific research decisively finds to be untrue. I will start to bring this chapter to a close and conclusion with just a little bit more exploration of the general nature of human affectivity.

4. The Phenomenon of Affectivity

Since philosophy's earliest days, philosophers have taken note of affectivity. With only a few exceptions, the early philosophers' attitudes toward it can accurately be described as hostile to some greater or lesser degree. We can let Plato speak for this attitude:

"The lovers of knowledge," said [Socrates], "perceive that when philosophy first takes possession of their soul it [the soul] is entirely fastened and welded to the body and is compelled to regard realities through the body as through prison bars, not with its own unhindered vision, and is wallowing in utter ignorance. And philosophy sees that the most dreadful thing about this imprisonment is the fact that it is caused by the lusts of the flesh, so that the prisoner is the chief assistant in his own imprisonment. The lovers of knowledge, then, I say, perceive that philosophy, taking possession of the soul when it is in this state, encourages it gently and tries to set it free, pointing out that the eyes and the ears and the other senses are full of deceit, and urging it to withdraw from these except in so far as their use is unavoidable, and exhorting it to collect and concentrate itself within itself, and to trust nothing except itself and its own abstract thought of abstract existence; and to believe that there is no truth in that which it sees by other means and which varies with the various objects in which it appears, since everything of that kind is visible and apprehended by the senses, whereas the soul itself sees that which is invisible and apprehended by the mind." [Plato (c. 360 BC), pp. 186-189]

¹⁵ A schema is a rule governing the form of a synthesis in the manifoldness and order of the parts.

¹⁶ The terminology is suggested by an analogy to mechanics in physics. In physics, mechanics is the study of interactions between matter and forces acting upon it. In "mental physics" we study perceptions and action schemes (analogous to matter in physics) and processes of judgment (analogous to forces in physics).

Aristotle took a less passionate and less hostile view of affectivity. His philosophy is not that far from how the empirical sciences (particularly psychology and neuroscience) regard affectivity today. He even seems to have anticipated the James-Lange theory of emotions by more than 22 centuries:

In most cases it seems that none of the affections, whether active or passive, can exist apart from the body. This applies to anger, courage, desire and sensation generally, though possibly thinking is an exception. . . . Probably all the affections of the soul are associated with the body . . . for when they appear the body is also affected. There is good evidence for this. [Aristotle (c. 335-322 BC), pp. 14-15]

Kant's view was much closer to Aristotle's than to Plato's although, of course, his way of looking at it is epistemology-centered rather than ontology-centered. But he, like his contemporaries, exhibited what I would call reticence about engaging the topic of affectivity through a systematic development of a theory of affectivity. He wrote:

A doctrine of the cognizance of the human being, systematically drawn up (anthropology), can be either in a physiological or in a pragmatic point of view. Physiological cognizance of the human being concerns the investigation of what *nature* makes of the human being, pragmatic of what he makes of himself, or can and should make of himself, as a free-acting being. [Kant (1798) 7: 119]

Physiology as a science barely existed in Kant's day and was laced with vitalism, and so he busied himself only with the pragmatic point of view. But, as he makes clear in the quote above, he regarded this approach as one belonging to practical Reason and moral philosophy rather than in terms of deriving a special *applied* metaphysic of affectivity. I have to call this a misplacement of perspective, and a sizable fraction of Wells (2006) is spent replacing Kant's misplacement. An *applied* metaphysic is a system of rational principles limited by and applied to the object of a science. It serves as a bridge between metaphysics proper and a special science [Wells (2011)] – in this case, a science of Aesthetic.

Figure 11 shows the organization of the applied metaphysic of affectivity at the second analytic level of representation. For something as complex as a metaphysic, two levels of representation are usually not sufficient to provide a useful (sufficiently non-abstract) explanation of the topic nor to deduce synthetic *momenta*. Figure 11 only provides an overview of the "bridgework" of the metaphysic. Its four headings require their own 2LAR explanations, and so the minimum representation of the applied metaphysic of affectivity is a 4th level (4LAR) representation. A 4LAR diagram gets rather too "busy" in its presentation, so in figure 11 the headings of Quantity (natural schema of judgmentation), Quality (act of affective perception), Relation (synthesis in continuity), and Modality (presentment of Reality), and their special *momenta*, are separately treated. Details of this treatment are found in Wells (2009), chapter 7.



Figure 11: 2LAR organization of the applied metaphysic of affectivity.



Figure 12: 2LAR organization of the natural schema of judgmentation.



Figure 13: 2LAR organization of the act of affective perception.

The natural schema of judgmentation is the system of schemata in judgmentation governing synthesis of ontological outcomes of judgmentation in general. The twelve schemata within the overall schema system comprise the judicial Standpoint of Kant's twelve ontological theorems of the metaphysic of physical-natural science [Kant (1786)]. Its derivation is found in chapter 18 of Wells (2006) with a briefer summary in Wells (2009), chapter 7. This metaphysic provides a practical framework for the possibility of cognitions of objects and the role of affectivity in cognizance. It explains from the judicial Standpoint why the operations of affectivity produce subjective regulations that lead to acts of cognition which have the force of ontological laws as their byproducts. These laws are not *constitutive* of a preformed ontology; rather, they are the basis in subjective actions for *constituting* experience of objects¹⁷.

The act of affective perception is assembling of the manifold of Desires, as I explained earlier. Figure 13 above succinctly recapitulates this earlier explanation.

The synthesis in continuity was discussed earlier in chapter 4. It was deduced in chapter 16 of Wells (2006) and pertains to the synthesis of reciprocity between reflective judgment and *psyche*. Its four heads

¹⁷ A function is *constitutive* if it is an innate function from which constituted functions are constructed. A function is *constituted* if it has been constructed from constitutive functions or other constituted functions.



Figure 15: The organization of the presentment of Reality as the structural unity of the subjective sources of human knowledge.

are synthetic functions by which reflective judgment pertains to the power of *soma* ("body") to produce or suffer effects (somatic *Kraft*), the power of *nous* ("mind") to produce or suffer effects (noetic *Kraft*), the somatic structure of adaptation in *nous-soma* reciprocity (somatic organization), and the *nexus* of meanings, i.e., the noetic structure of adaptation in *nous-soma* reciprocity (noetic organization). The four synthesizing functions are named objectivity, the aesthetic Idea, the judicial Idea, and Meaning, as shown in figure 14. An Idea, you will recall, is a pure regulative *principle* of actions, not a cognition of an object.

Lastly, the presentment of Reality is that part of the metaphysic of affectivity dealing with empiricism, i.e., how *Existenz* in Reality is subjectively synthesized in apperception by means of judgmentation. The *momenta* in figure 15 are explained in chapter 7 of Wells (2009). They pertain to *structuring* the unity of sense, imagination, and apperception in sensibility. Presentment is that in the synthesis of apprehension or

comprehension which is made conscious only as a subjective factor in the synthesis.

All this is a great deal to take in all at once and without having had the opportunity to study the details of the deductions summarily presented here. I certainly don't expect you to grasp all of this immediately and all at once. Considering how long philosophy and science struggled to understand affectivity, such an expectation would be entirely unreasonable – not to mention that I didn't find this topic easy, either. Let us not get too lost in the details above but, rather, turn back to the topic of theology and ask: how is all this is pertinent to religion and theology?

5. Innocent Foundations

Affectivity drives all objective cognitions and the construction of all practical rules in the manifold of rules. It connects every human being to the world of his temporal *Existenz* and it sets the foundations for the development of every person's personal moral code and the nature of his moral judgments. It sets a person's values and, indirectly through the mediation of practical judgment and appetition, leads to the individual's cognizance and understanding of objects of experience *and* to ideas of noumena, including his religious noumena and dialectical faith in the divine (in whatever form this takes, including atheism).

One dictionary definition of "innocence" is "lack of worldly experience or sophistication," and that certainly describes newborn infants. What the Critical doctrine of human nature teaches is that every one of us enters this world in a state of **absolute** innocence – without experience, without knowledge of objects, without practical cunning of any sort whatsoever. I suggest to you that no one can possibly be more innocent than this – hence, every one of us is born **absolutely** innocent. We do not stay this way, of course. Every person proceeds to *build* his manifold of rules in practical Reason and his manifold of concepts in determining judgment as he or she gains experience. As these are the determiners of one's personality, it can truly be said that *every person makes himself the person he or she chooses to become*.

All of a man's experience, all his empirical knowledge, even all his concepts of objects, are absent when he is born into our temporal world. All that he acquires is born of his affectivity. If God created you and put you here, would it not seem strange if he did so without equipping you to deal and cope with the natural objects you will come to experience? And does it not seem strange that he would do so by means of *non*-objective affectivity? Perhaps it does unless we remember that *super*nature, not nature, is the divine realm. The spatio-temporal world *we* come to know is, at most, only a subset of the idea of supernature, and the spatio-temporal Reality we come to know but a subset of ideas under an Idea of All-of-Reality. Physicist-turned-philosopher Henry Margenau wrote in his book,

The word "physical" in the title of this book has long been regarded as a harmless and somewhat indiscriminate adjective, even as redundant, leading to the comment: What other kind of reality could there be? Recently, however, I have occasionally had to face a different sort of inquiry, culminating in the question: Did you intend to suggest by the use of the qualifier "physical" that there could be other kinds of reality? To this I have answered: Yes. [Margenau (1977), pg., iv]

Affectivity is non-ontological, yet it drives cognition and grounds the development of ontology. Man constructs his own knowledge of nature but the basis of his constructions lies in something that has no place in an ontology. This seems to me to imply that supernature is to be regarded as essentially affective, and ontological things as secondary to this, so far as any notion of divine purposiveness in the *Dasein* of humankind is concerned. Clearly, a human being must develop knowledge of nature and practical laws to accommodate himself to the natural environment in order to be able to cope with it and sustain a temporal life as an object among natural objects. But shall we regard this need to cope with nature as our primary end? Or might there be another and higher purpose at work in us? Consider if this question suggests a deeper and more poignant way to understand the words of Paul:

For we know in part and we prophesy in part, but when what is complete comes, the partial shall be

set aside. When I was a child, I talked like a child, I thought like a child, I reasoned like a child. When I became a man, I set aside childish ways. For the present we are looking through a mirror obscurely, but at that time, face to face. Now I know in part, at that time I will know fully, just as I have been fully known. And now remain faith, hope, and love, these three. And the greatest of these is love. [1 Corinthians 13:9-13]

Faith, hope, and love: these are notions of affectivity; notions for which no objectivity can ever suffice. No one can *take* faith, hope, or love from you; you can *give* any or all of them up, but if you do that is *your* choice. Many people do; temporal life is hard, taxing, and burdensome. Robert Frost wrote,

Nature's first green is gold, Her hardest hue to hold. Her early leaf's a flower; But only for an hour. Then leaf subsides to leaf. So Eden sank to grief, So dawn goes down to day. Nothing gold can stay. [Frost (1923)]

Frost is one of my favorite poets but I do not agree with his last line. All appearances of temporal objects exhibit "dawn going down to day" – natural fading and decay; but this is not necessarily so for one's inner principles born of affection. A little child is golden and when you are still shiny and new, the whole world is too. We can, each of us, keep that golden inner child alive in our spirits if we choose to. Let us look again at the moral lesson in Matthew:

At that time the disciples came to Jesus, saying, "Who then is the greatest in the realms of heaven?" and Jesus invited a child to come to him, and placing him in their midst, said, "I tell you the truth, unless you change and become like the children you will never enter the realm of heaven." [Matthew 18:1-3]

If God created you and placed you here, and did so purposively, then he made you an affective being first, an empirical object second. Let us then go on to see where our innocent foundations might guide us.

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Author's website: http://www.mrc.uidaho.edu/~rwells/techdocs