

Chapter 5

Rational Factors in Self-Determination: Mind Function

§ 1. The Logical Division of Mind and Body

The word *judgmentation* is a technical term in mental physics that was coined to provide an English translation for one of Kant's technical terms (*Beurtheilung*) used in Critical epistemology. It is the overall process of exercising reasoning, determining judgment, reflective judgment, the synthesis of sensibility in apprehension and apperception, and the regulation by practical Reason of motoregulatory expression. This overall process is what is implied by the judgmentation loop depicted in our figure representing the functional structure of the phenomenon of mind (repeated once again for convenience of reference as figure 5.1 below). Viewed with an epistemology-centered system of metaphysics, mind is one of the two principal phenomena characteristic of being a human being. The other characteristic is, of course, the physical phenomenon we call body. In Critical epistemology mind and body must be treated as co-equal and *merely logical* divisions of *one* real phenomenon, namely the phenomenon of being human. Phenomenal mind is an experienced ability: the ability to make representations, to use them, and to understand these representations as "something in me that refers to something else". It is an ontological error to think about "the" mind as if mind were a *thing* independent of body.

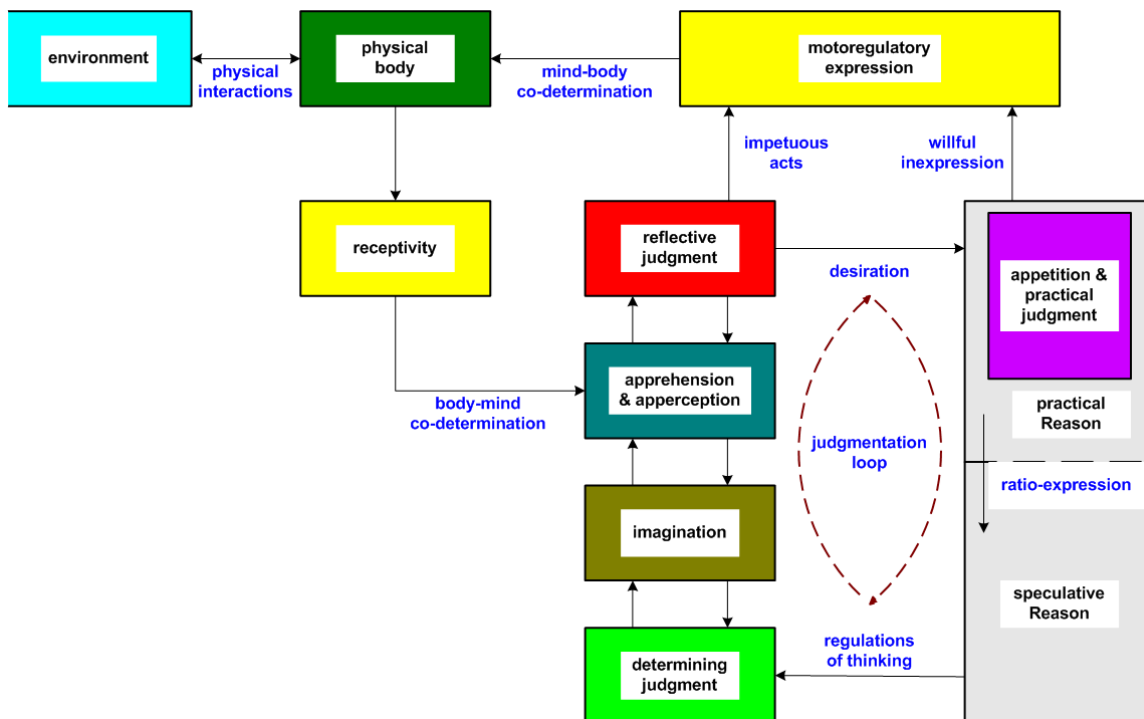


Figure 5.1: The functional structure of the phenomenon of mind in mental physics.

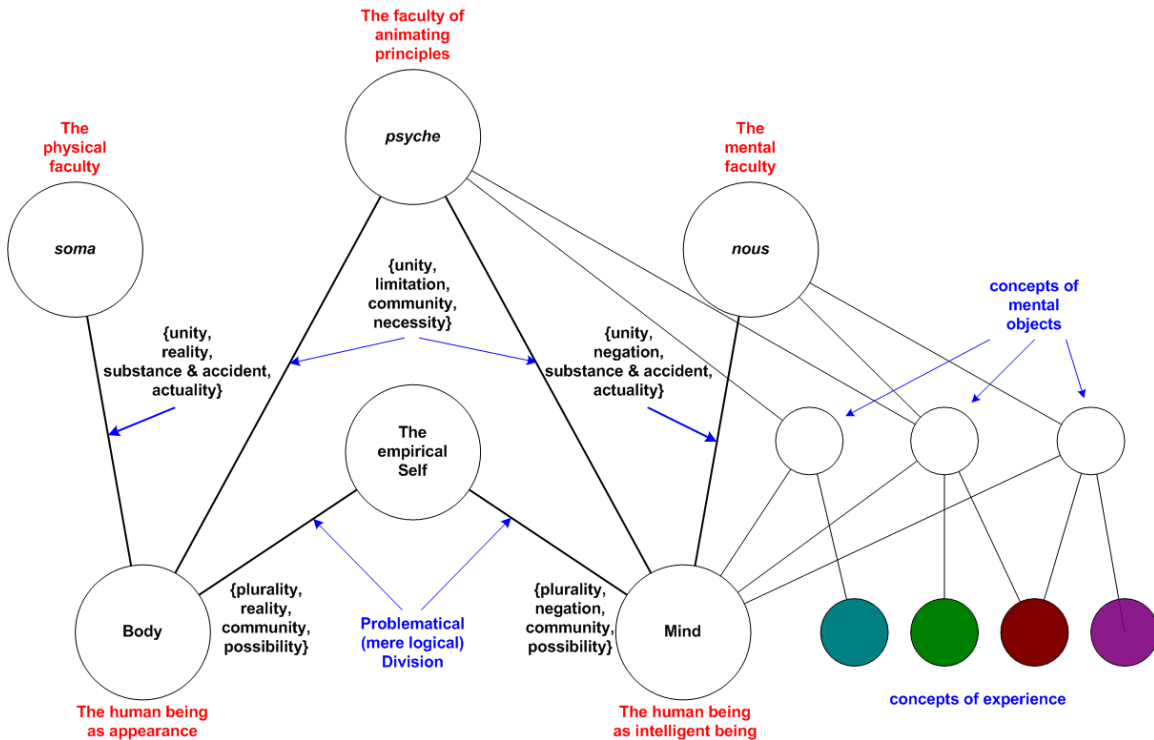


Figure 5.2: The conceptual structure of mind-body division

To say the mind-body division is merely a logical division means that this division is a mathematical, not an ontological, way of looking at the overall phenomenon who is the individual human being. As such it can be mathematically represented as illustrated in figure 5.2 above. We begin with the empirical Self, the real entity for every actual experience. From this we speculatively distinguish between those aspects of the Self we call physical and those we call mental. This is the problematical and logical mind-body division. It is very noteworthy to observe that this understanding of one's Self is utterly absent in the newborn infant. For a long time the child exhibits great difficulty differentiating itself from its surrounding environment, an infantile perspective Piaget has termed the radical egocentrism of the child:

In general it may be said that during the first months of life, as long as assimilation remains centered on the organic activity of the subject, the universe presents neither permanent objects, nor objective space, nor time interconnecting events as such, nor causality external to the personal actions. If the child really knew himself, we should have to maintain that solipsism exists. At the very least we may designate as radical egocentrism this phenomenalism without self-perception, for the moving pictures perceived by the subject are known to him only in relation to his elementary activity. – Piaget, *The Construction of Reality in the Child*

In recent years this finding has been disputed by a number of American psychologists. If one compares their research reports and argumentation against the enormously more massive body of evidence reported over many decades by Piaget and his collaborators, one can only dismiss these

criticisms as flimsy and ontology-centered speculative interpretations that probably tell more about the subjectivity of the analyzing psychologist than about the infants who were studied. Epistemologically, Piaget's finding quoted above is sound and rationally grounded, while those of his critics are epistemologically fallacious examples of Leibniz-like rationalism.

Given the initial logical division into concepts of mind and body, doing an analysis requires us to construct a theoretical structure in which we *assign* objects to the mind and body phenomena. This is what is represented in figure 5.2 by the *nous* and *soma* constructs. However, because the initial mind-body division was merely logical (not a *real* division), maintenance of the organic unity of the Self necessitates that a thorough-going reciprocity exist between the mental and the physical because mind and body coexist in Self. This reciprocity is Critically necessary for the possibility of experience as human beings come to know experience. Thus it is necessary to posit a faculty of animating principles to ensure *logical congruence* between the mind and body divisions. This is represented in the figure by the *psyche* construct. *Nous*, *soma*, and *psyche* collectively comprise the fundamental *logical* divisions in the *real organic unity* of a human being. Other concepts of experience developed by a human being then take their places in the manifold of concepts subsumed under the constructs of *nous* and/or *psyche* as shown.

There is no other objectively valid (and therefore scientifically correct) way to look at the phenomenon of mind. The famous "mind-body problem" so often discussed in philosophy and philosophically-oriented scientific discourses is *an unreal problem* brought about from ontology-centered prejudices people have been using since before history began to be recorded. If one insists on looking at mind as a *thing* instead of seeing it merely as an object¹ there are only two rational endpoints reasoning can ultimately come to: spiritualism or mysticism.

Spiritualism is, of course, the province of religion and religious theology. Spiritualism is not a view of nature but, rather, the *supernatural*. Science can make utterly no use or application of any supernatural idea or principle. Science is not competent to say either "God exists" or "God does not exist." Science is not competent to say the soul exists (in the religious context) or that it does

¹ The technical distinction between an object (in German, *Gegenstand*) and a thing (in German, *Ding*) is important. An object is a unity of concepts ("that by which concepts are united in understanding"). It is a function of human understanding in and by which real meanings are vested in representations by the process of judgmentation. The meanings vested in an object are what prevent one's cognitions from being haphazard and arbitrary. A thing, on the other hand, is an object *regarded* in terms of the *possibility* that the object either actually or necessarily exists independently of the human being who represents that object by his concepts. One way to put this is to say a thing is an-object-as-we-know-it. If we think of a thing in terms of a *complete negation* of all Relations of community between the thing and the human being who knows the object, and we also think about the thing in terms of it having a real manner-of-existence (in German, *Existenz*), we have what Kant termed "a thing-regarded-as-it-is-in-itself" (a *Ding an sich selbst*). This is a-thing-as-we-cannot-know-it because it would be something a human being has utterly no possibility of experiencing. A *Ding an sich selbst* is a product of pure and fantastic speculation.

not exist. Science is the doctrine of nature, not super-nature.

Mysticism is where the present day pseudo-metaphysical attitude called scientific materialism ends up. In this view the concept of mind is made subordinate to the concept of body and is then to be explained as some sort of epiphenomenon, some sort of non-fundamental flotsam that "emerges" from physical phenomena of body. "All things are made of atoms," the physicists are fond of telling us, and, therefore, everything must be *made* to find its ultimate explanation from atoms, what atoms do, and how they do it.

But this is nothing else than an *unscientific opinion* and is based on nothing that can come forth from actual phenomena whatsoever. Bluntly, it is nothing but a hope and a faith materialists bind themselves to in a manner no different from how the Scholastics, and Plato, employed religion. Our scientific understanding of atoms contains nothing whatsoever from which mental phenomena (thinking, emotion, consciousness, etc.) can be demonstrated in real (experienced) nature. There are no happy or sad electrons; there are no pontifical cells; there is no mind dust; there are no arch-monads or mind-stuff. Yet for materialism to work something like these must exist *substantially* or else there is no *real* possibility to connect material physics to psychological phenomena. The scientific materialist's idea of mind is and can be nothing else than the idea of an occult quantity utterly beyond the horizon of any possible human experience. The application of rigorous logical rationalization cannot establish the materialist's notion of "mind" with any real objective validity. This is something William James long ago pointed out:

The facts of mental deafness and blindness, of auditory and optical aphasia, show us that the whole brain must act together if certain thoughts are to occur. The consciousness, which is itself an integral thing and not made of parts, 'corresponds' to the entire activity of the brain, whatever that may be, at the moment. This is a way of expressing the relation of mind and brain from which I shall not depart . . . because it expresses the bare phenomenal fact with no hypothesis, and is exposed to no such logical objections as we have found to cling to the theory of ideas in combinations.

Nevertheless, the formula which is so unobjectionable if taken vaguely, positivistically, or scientifically, as a mere empirical law of concomitance between our thoughts and our brain, tumbles to pieces entirely if we assume to represent anything more intimate or ultimate by it. The ultimate of ultimate problems, of course, in the study of the relations of thought and brain, is to understand why and how such disparate things are connected at all. But before that problem is solved (if it ever is solved) there is a less ultimate problem which must first be settled. Before the connection of thought and brain can be explained, it must at least be *stated* in an elementary form; and there are great difficulties about so stating it. To state it in elementary form one must reduce it to its lowest terms and know which mental fact and which cerebral fact are, so to speak, in immediate juxtaposition. We must find the minimal mental fact whose being reposes directly on a brain-fact; and we must similarly find the minimal brain-event which will have a mental counterpart at all. Between the mental and the physical minima thus found there will be an immediate relation, the expression of which, if we had it, would be the elementary psycho-physical law.

. . . But in taking the entire brain-process as its minimal fact on the material side it

confronts other difficulties almost as bad.

In the first place, it ignores analogies on which certain critics will insist, those, namely, between the composition of the total brain-process and that of the *object* of the thought. The total brain-process is composed of parts, of simultaneous processes in the seeing, the hearing, the feeling, and other centers. The object thought of is also composed of parts, some of which are seen, others heard, others perceived by touch and muscular manipulation. "How then," these critics will say, "should the thought not itself be composed of parts, each the counterpart of a part of the object and of a part of the brain-process?" So natural is this way of looking at the matter that it has given rise to what is on the whole the most flourishing of all psychological systems . . . of which school the mind-stuff theory is nothing but the last and subtlest offshoot.

The second difficulty is deeper still. *The 'entire brain-process' is not a physical fact at all.* It is the appearance to an onlooking mind of a multitude of physical facts. 'Entire brain' is nothing but our name for the way in which a million of molecules arranged in certain positions may affect sense. On the principles of the corpuscular or mechanical philosophy, the only realities are the separate molecules, or at most the cells. Their aggregation into a 'brain' is a fiction of popular speech. Such a fiction cannot serve as the objectively real counterpart to any psychic state whatever. Only a genuine physical fact can so serve. But the molecular fact is the only genuine physical fact – whereupon we seem, if we are to have an elementary psycho-physic law at all, thrust right back upon something like the mind-stuff theory . . .

What shall we do? Many would find relief at this point in celebrating the mystery of the Unknowable and the 'awe' which we should feel at having such a principle to take final charge of our perplexities. Others would rejoice that the finite and separatist view of things with which we started had at last developed its contradictions, and was about to lead us dialectically upwards to some 'higher synthesis' in which inconsistencies cease from troubling and logic is at rest. It may be a constitutional infirmity, but I can take no comfort in such devices for making a luxury of intellectual defeat. They are but spiritual chloroform. – William James, *The Principles of Psychology*, vol. I, vi

The 'higher synthesis' James mentions is a reference to Hegel and his failed system of super-Platonism. No ontology-centered system has ever – or will ever – overcome the multitude of real problems and objections James laid out with devastating effect in *The Principles of Psychology*. It is unfortunate that James mistakenly believed Kant's system to be ontology-centered; if this had been true, his attacks upon it would have been equally devastating. But in point of fact, the theory of "transcendentalism" James so effectively demolished was not Kant's but, rather, the theories of Fichte and the other proponents of German idealism who immediately followed Kant into the pages of history, and who misunderstood Kant's *Kritik* to merely mean rational criticism rather than epistemology. Fichte, no shrinking violet, boldly proclaimed he understood Kant's system "better than Kant himself did." To this claim your author responds with a two-syllable bovine epithet unsuitable to print in these pages.

James, whose own philosophy (Jamesian Pragmatism) took epistemological considerations into account but still remained ontology-centered, was unable to resolve the mind-body paradox. He found part of the solution, viz. scientific recognition of the coexistence of physical and mental phenomena in terms of a merely "empirical law of concomitance between our thoughts and our

brain," but his ontology-centeredness prevented him from taking the next step. This is to understand theoretical expressions of such empirical laws must, from the Critical viewpoint, be recognized as being *mathematical* ideas (owing to the *supersensible*, but not *supernatural*, Nature of mental phenomena). The Critical mind-body logical division is the first step to this. What is essential here is that we firmly grasp the principle by which mathematical objects are *made* concomitant with physical objects, a principle called Slepian's principle in *Principles of Mental Physics*. It is not without interest to note here that the method of renormalization in the theory of quantum electrodynamics is nothing else than a special case of applying Slepian's principle; modern physics has brought itself to this point of understanding without realizing it has done so.

To relegate mind to the materialist's realm of mere epiphenomenon is to immediately deny there can be any objective validity to what we have called psychological causality. That this is a mere speculative premise and not a fact is something else James pointed out:

However inadequate our ideas of causal efficacy may be, we are less wide of the mark when we say that our ideas and feelings have it than the Automatists are when they say they haven't it. As in the night all cats are gray, so in the darkness of metaphysical criticism all causes are obscure. But no one has the right to pull the pall over the psychic half of the subject only, as the automatists do, and to say that *that* causation is unintelligible, whilst in the same breath one dogmatizes about *material* causation as if Hume, Kant, and Lotze had never been born. One cannot thus blow hot and cold. . . . Psychology is a mere natural science, accepting certain terms uncritically as her data, and stopping short of metaphysical reconstruction. Like physics, she must be *naive*; and if she finds that in her very peculiar field of study ideas *seem* to be causes, she had better continue to talk of them as such. She gains absolutely nothing by a breach with common-sense in this matter, and she loses, to say the least, all naturalness of speech. . . . My conclusion is that to urge the automaton-theory upon us, as it is now urged, on purely *a priori* and *quasi*-metaphysical grounds, is an *unwarrantable impertinence in the present state of psychology*. – [*ibid.*, v]

Modern materialists stubbornly resist the logical follow up to a very pertinent fact: none of the fundamental principles and ideas of physics – energy, probability amplitudes, bosons, leptons, etc. – have the least connection whatsoever to any mental phenomenon. The hope is clung to that some future genius will find a way to explain the emergence of mentality as a consequence of probabilistic wave mechanics, but this is nothing else than a Platonic reliance upon the god of probability to rescue the premise. Magic and miracles, no matter how sophisticatedly clothed in raiments of mathematical hieroglyphics, remain magic and miracles and have no place in science. The premise cannot be rescued with objective validity by an *ad hoc* fiat proclaiming the birth of a new physical first principle; to do so is to trample on a fundamental *maxim of discipline* physics has proclaimed beholding to itself since the days of Newton:

RULE IV: *In experimental philosophy we are to look upon propositions inferred by general induction from phenomena as accurately or very nearly true, notwithstanding*

any contrary hypotheses that may be imagined, till such time as other phenomena occur, by which they may either be made more accurate or liable to exception.

This rule we must follow, that the argument of induction may not be evaded by hypothesis. – Isaac Newton, *Mathematical Principles of Natural Philosophy*, III

Note carefully the wording: It says *from* phenomena, not *for* phenomena. To violate this rule of science is Platonism and nothing else. Regarding mental objects it is as James said:

Everyone admits the entire incommensurability of feeling as such with material motion as such. "A motion became a feeling!" – no phrase that our lips can frame is so devoid of apprehensible meaning. – William James, *The Principles of Psychology*, vol. I, vi

In this chapter we deal with judgmentation and what mental physics calls *the motivational dynamic*. Our aim here is to bring ourselves to an understanding of rational factors in human self-determination. As we do so, it is important that we understand and treat psychological objects *as* psychological objects home-based firmly within the logical context of the mind division of human Nature. The background considerations just discussed are propaedeutic for achieving this objective.

§ 2. Standpoints and Judgmentation

Each of the three distinct processes of judgment has its own specialized role within the overall activities of mental representation. Each role can be regarded as providing a perspective of knowledge, and the perspectives determined by each type of judgment interact to produce overall

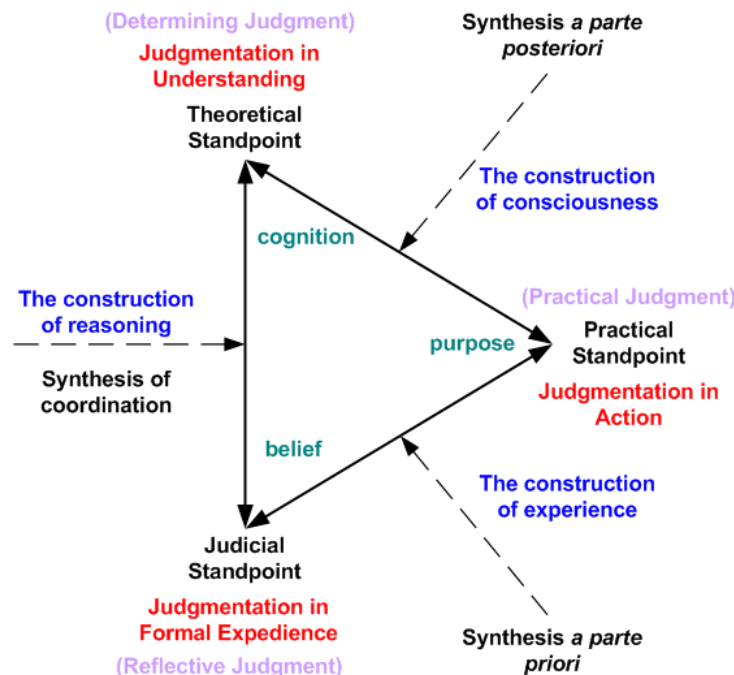


Figure 5.3: The three Critical Standpoints and their relationships in judgmentation

knowledge. Critical epistemology itself can be regarded as what philosopher and Kant scholar Stephen Palmquist² has termed a *system of perspectives*. Understanding the system of perspectives is key to understanding Kant's philosophy and Critical epistemology. Bearing in mind the practical description that a philosophy is a way of looking at the world, Critical perspective is a philosophical viewpoint for systematically evaluating philosophical concepts that emphasizes a particular aspect of these concepts in relationship to metaphysics proper and in relationship to the capacities of the phenomenon of mind.³ Critical perspective is divided into objective perspectives, which we call *reflective* perspectives, and subjective perspectives, which we call *Standpoints*. The reflective perspectives (of which there are four) are lower perspectives because the evaluation of any reflective perspective is conditioned by the Standpoint under which the evaluation is being made. While an understanding of the reflective perspectives is needed for understanding the theory of Critical metaphysics proper, in this treatise we will only need an appreciation of the Standpoints in order to accomplish our present goal. Figure 5.3 illustrates the three Critical Standpoints and their places in the overall process of judgmentation.

Broadly speaking, **knowledge** (*Erkenntnis*) is any conscious mental representation *or the capacity for making such a representation* by or through which meanings are determined.⁴ Each of the three Critical Standpoints deals with one particular class of knowledge and is associated with one of the processes of judgment because the final act of representing that knowledge is performed by an act of that process of judgment. This is not to say the other two processes of judgment are uninvolved; that is not so and figure 5.3 is intended to illustrate this. It is merely to say that the final act in which a representation of knowledge is synthesized is carried out by the process of judgment associated with the Standpoint (to which that knowledge is conventionally said to "belong"). The *theoretical Standpoint* is the Standpoint of determining judgment; the *practical Standpoint* is the Standpoint of practical judgment; and the *judicial Standpoint* is the Standpoint of reflective judgment, all as indicated in figure 5.3.

² Palmquist was the first to realize that Kant's system of perspectives was key to understanding his theory.

³ In epistemology-centered metaphysics perspective has a fundamental role because perspective deals with the known phenomenon that human beings *are able to have* knowledge. The task of Critical metaphysics can be viewed as the task of asking "How is knowledge possible?" since without knowledge we could have no experience. A systematically developed ontology-centered metaphysic will be a theory developed along the lines of at least one sort of perspective as well, but the crucial difference is that this perspective will be contingent upon the ontological presuppositions and premises held by the metaphysician. How did he come by these presuppositions and premises though? To understand this, one must start with an epistemological analysis; for this reason, Critical perspective is more fundamental than ontology perspective.

⁴ We also use the word knowledge in a narrow sense to mean a cognition held-to-be an inalterable assertion of truth. This is what we mean when we say knowledge differs from opinion. We also use the word in a third connotation, viz., Knowledge (*Wissen*) is systematic and inalterable assertion of truth held with consciousness that one's holding-to-be-true is apodictic with both objectively sufficient and subjectively sufficient grounds of understanding. The context of Knowledge is that of an Object established as an Ideal.

The type of knowledge dealt with in the theoretical Standpoint is *cognition*. Cognition is conscious objective representation, and the representation synthesized is a representation of an object. Cognition involves two sub-species of representations, namely *intuition* and *concept*. An intuition is a representation of the synthesis of apprehension. Its *judgment* is a *subjective* act of representation and its object is merely a sensible appearance. It is only because an intuition is a representation of an appearance, and does not refer to any feeling of *Lust* or *Unlust*, that the intuition is said to be objective. In this context one can say an intuition is a "cold perception." A concept is the representation of a rule (a rule of understanding in the manifold of concepts) for the *reproduction* of an intuition. All concepts originate as re-representations ("re-cognitions") of intuitions and are *exclusively* employed as aliments feeding into the synthesis of apprehension. The two-way bridge linking sensibility (synthesis of apprehension plus synthesis of apperception) and determining judgment is the process we call **imagination** (*Einbildungskraft*). Because the synthesis in sensibility is fed from two immediate sources (receptivity in *psyche* and the manifold of concepts in determining judgment), an intuition can be formed using either source of aliment alone or it can be the product of both. When an intuition is represented using only aliments of receptivity it is said to be an apprehensive cognition. When the synthesis of an intuition involves contributions from concepts the intuition is said to be a product of thinking. ***Thinking is cognition through (by means of) concepts.***

The type of knowledge dealt with in the judicial Standpoint is *belief*. Belief has a relationship to cognition (a synthetic relationship) but it is in its essence a product of *apperception* rather than apprehension. Belief is *unquestioned* holding-to-be-true-and-binding on the basis of a merely subjectively sufficient reason, and is held without consciousness of doubt. The holding-to-be-true modality of belief is its reference to intuition. Every concept directly originates from an intuition (by means of the process of re-cognition in imagination) and the *first* representing of a concept can correctly be called a *belief conception*. The holding-to-be-binding modality of belief is its reference to acts of representation aimed at *actions* to be expressed through the motoregulatory expression of *psyche*, bearing in mind that this expression is subject to the determination of appetitive power in practical Reason. It is the relationship between belief and the expression of actions (this relationship being aptly called the *emotivity* of a human being) that is the essential root of the possibility for mental representations to *mean something*. For the human being a representation of belief is true-and-binding *at the moment of its first presentation*, but in the march of experience it is also possible (indeed, it is usual) for this representation to later run afoul of reflective judgments of aesthetical inexpedience. When this happens the act of judgment is called *the questioning of belief*.

Once questioned, what was regarded by the human being as a concept of belief is subject to conditioning (by judgmentation) and thereby is, in a manner of speaking, "demoted" from its previous lofty and privileged status. If in its characteristic essentials the concept is still held-to-be-true (in the face of the *consciousness* of doubt raised by aesthetical reflective judgment and upon a subjectively sufficient reason but with consciousness of the lack of objectively sufficient reason) the concept is called a concept of faith. *Faith* is holding-to-be-true that-which-one-knows *might not* be true. If after the act of questioning a belief the concept is still held-to-be-true on the basis of *both* a subjectively sufficient *and* an objectively sufficient reason, the concept is called a *concept of knowledge*. Note that the concept cannot be said to be *known-to-be-certain* (because it has been questioned) but rather we say it is rationally-held-to-be-true (which is not the same thing as being certain). This brand of holding-to-be-true is also called a knowledge of conviction. If after the act of questioning a belief the concept is still held-to-be-true but with consciousness that the ground for this holding-to-be-true is neither subjectively nor objectively sufficient but, equally, with consciousness of insufficient grounds for holding-it-to-be-false, the concept is called a *concept of opinion*.

A concept once formed is never discarded. If, in its original combinations within the manifold of concepts, it comes to be held as false in the face of some later experience, the concept is *re-conditioned* by other combinations of determinant judgments. The manifold of concepts is a structure and its mental processes are conservative, which means accommodations are made to the manifold to, in a manner of speaking, "hold on to what *is* true in the concept" while recognizing *limitations of context* of when the concept is held-to-be-true. Remember that when it was first conceptualized (as a belief), the concept representation *had to be* formally expedient for some purpose of pure practical Reason or it would never have been presented as an intuition in the first place. This is as much as to say "there had to be *some* truth in the concept" at the beginning. Determining judgment does *not* have the power to determine an intuition; it only has the power to combine concepts of intuitions in the manifold of concepts according to its own *a priori* laws of understanding. A representation in sensibility is *made* an intuition *through* a judgment of formal expedience and *as a consequence* of a *non-objective* act of reflective judgment. One might rather loosely say, "a belief is a belief because it *feels like* a belief." *Every* intuition can correctly be called "a belief of the moment."

What we can see from this is that the processes of determining and reflective judgment interact strongly in the synthesis of sensibility. This is illustrated by figure 5.4 below. The synthesis of apprehension produces affective perceptions and intuitions but it is the synthesis of apperception that *marks* the difference between what is represented objectively as intuition and what is marked

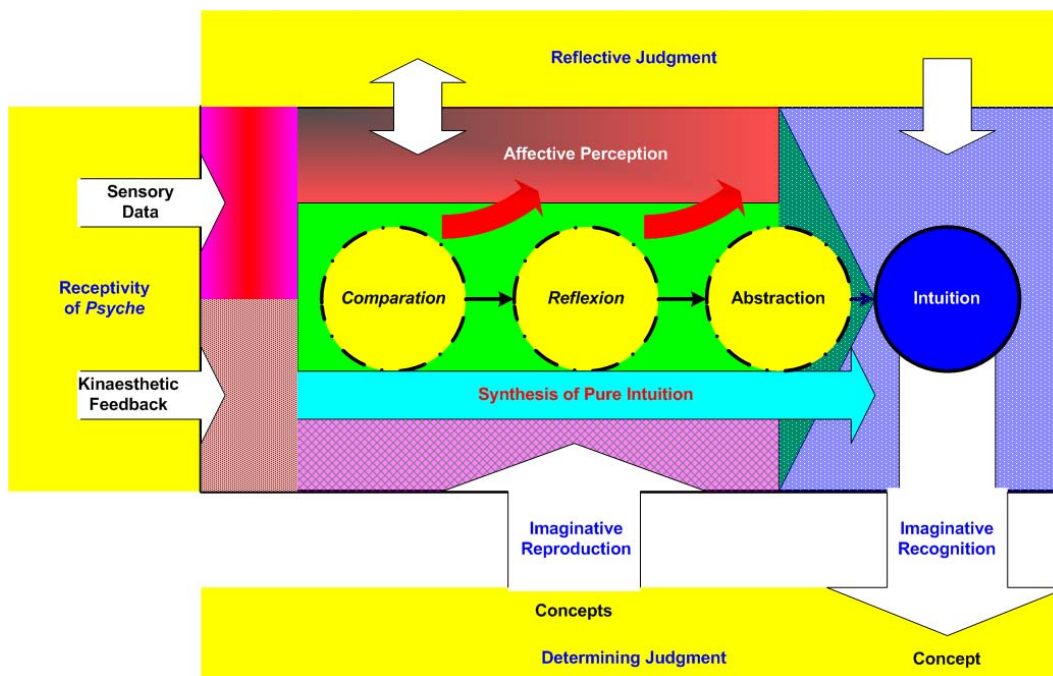


Figure 5.4: The synthesis in sensibility

merely in reference to the feeling of *Lust* or *Unlust* as an affective perception. The first principle of determining judgment is the **principle of conformity to law**: *all objects of Nature conform necessarily to the a priori laws which are the conditions of the possibility of experience*. The first principle of reflective judgment is the **principle of formal expedience of Nature**: *all acts of reflective judgment legislate for formal unity in Nature according to the expedience of representations for the categorical imperative of pure practical Reason*. Now one way to describe the idea of the expedience of a perception is to say the perception is "fit" or "suitable" for some practical purpose of Reason in the determination of appetitive power. The process of practical judgment is the final arbitrator of whether or not a representation of reflective judgment is indeed *universally* "fit" or "suited" for the determination of appetitive power under the rule of the formula of the categorical imperative. (And, in specific point, all such practical judgments are judgments of *lack* of expedience according to the manifold of rules; Reason passively *allows*, actively *veto*es acts of motoregulatory expression).

In this way we see how practical judgment enters *mediately* into the syntheses of determining and reflective judgments within the overall process of judgmentation. Reason *employs* the process of determining judgment, through ratio-expression, and *controls* impetuous reflective judgment through the determination of appetitive power. This is why the type of knowledge dealt with by practical judgment is called knowledge of *purpose*. George Santayana, who seems to have had an uncanny "feel" or "instinct" for human nature, hit the mark squarely when he wrote,

Reflection gathers experiences together and perceives their relative worth; which is as much as to say that it expresses a new attitude of will in the presence of a world better understood and turned to some purpose. – Santayana, *Reason in Common Sense*

We cannot neatly dice up the three processes of judgment and treat them without regard for how each is affected by the others and, in its turn, affects them. Critical understanding of this goes by the name *synthesis of Standpoints* and is also intended to be illustrated by figure 5.3. A metaphor is useful for grasping the role and function of mental synthesis. In chemistry we denote the synthesis of water from hydrogen and oxygen gas with the formula $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$. This notation denotes that two molecules of hydrogen gas combine with one molecule of oxygen gas to make two molecules of water. Now, a molecule of water is not a molecule of hydrogen with a half molecule of oxygen glued to it. In the reaction the hydrogen gas and the oxygen gas both disappear and in their places we find liquid water. Nonetheless, without the two gases the liquid could never form.

We can similarly represent the synthesis of a cognition as belief + purpose \rightarrow cognition. The difference here, however, is that neither the belief nor the purpose are annihilated in the process of making the cognition. Mental objects are not molecules. But the idea common to both the chemical reaction and the mental synthesis is that some matters (hydrogen and oxygen; belief and purpose) must go into the synthesis in order for the outcome (water; cognition) to be possible and the product of this synthesis is different in kind from the terms that were combined. We call what is represented by the formula belief + purpose \rightarrow cognition the *construction of experience*. Experience is the structured system of empirical cognitions and so the synthesis is called a synthesis *a parte priori*⁵ because prior to cognition one has no experience. Reflective judgment must supply the belief, Reason must supply the purpose (in the service of which determining judgment is employed), and determining judgment supplies the connection of concepts that represents the object of experience as a phenomenon understood in a context.

The synthesis belief + cognition \rightarrow purpose denotes the cooperative effect of reflective and determining judgments on the determination of appetitive power. Here the subjective in affectivity (belief) and the objective in understanding (cognition) are purposively coordinated. Hence this act of synthesis is called the *construction of reasoning* and the synthesis itself is a synthesis of coordination, i.e. the coordinating of subjective and the objective knowledge.

Finally, the synthesis cognition + purpose \rightarrow belief denotes the cooperative effect of Reason and determining judgment on the affective condition of the human being. In this synthesis past experiences and present purposes exert their influence upon perception and its representation in

⁵ "from the side of the preceding." The preceding is that which precedes experience.

the feeling of *Lust* or *Unlust*. We call this act of synthesis the *construction of consciousness*. The synthesis is called a synthesis *a parte posteriori*⁶ because the present state of consciousness is conditioned by past experience and sets the stage for what will follow. It is the synthesis by which goal-directed actions follow from the combining act of belief. We might now correctly anticipate that *motivation* is found to be *immediately* related to this act of synthesis and will be *mediately* related to the others.

We can further our understanding of the Critical Standpoints by setting them next to a set of questions Kant called the interests of pure reason. For the theoretical Standpoint the question is, "What can I know?" For the practical Standpoint the question is, "What should I do?" For the judicial Standpoint the question is, "What can I hope?" The first pertains to one's comprehension of life, the second to one's practice of living, the third to one's anticipations in life.

§ 3. The Judgmentation Cycle I: The Empirical Context of Actions

It has long been observed in biology that living organisms exhibit a cyclic character in their various appearances. The same is true of mental life and, indeed, the establishment of functional cycles by the phenomenon of mind is a *theorem* in mental physics. Two key cycles, illustrated in figure 5.5, are the cycle of thinking in understanding and the cycle of reasoning in judgmentation. Because the divisions within *nous* are logical (that is, mathematical) rather than real divisions, we must regard these cycles as logical orderings rather than temporal sequences. Nonetheless, at the behavioral level where we are dealing with phenomenal appearances, we must expect to find empirical behavior patterns consistent with the mathematical cyclicity of mind. In point of fact when scientific observation looks for it we do find such a mirroring. Piaget wrote,

The organism is a cycle of physicochemical and kinetic processes which, in constant relation to the environment, are engendered by each other. . . . The processes . . . may consist either of chemical reactions . . . or of any physical transformations whatsoever, or,

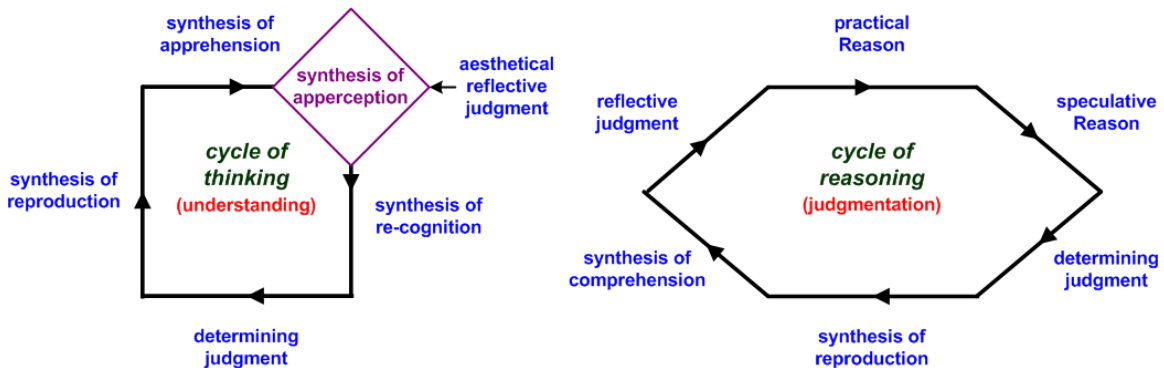


Figure 5.5: The cycles of thinking and reasoning

⁶ "from the side of the next."

finally, in particular, of sensorimotor behavior (where a cycle of bodily movements a combined with external movements x result in [bodily movement] b which itself enters the cycle of organization). The relationship which unites the organized elements . . . with the environmental elements . . . is therefore a relationship of *assimilation*, that is to say, the functioning of the organism does not destroy it but conserves the cycle of organization and coordinates the given data of the environment in such a way as to incorporate them in that cycle. . . If we call this result of the pressures exerted by the environment *accommodation* . . . we can accordingly say that *adaptation is an equilibrium between assimilation and accommodation*.

This definition applies to intelligence as well. Intelligence is *assimilation* to the extent that it incorporates all the given data of experience within its framework. Whether it is a question of thought which, due to judgment, brings the new into the known and thus reduces the universe to its own terms, or whether it is a question of sensorimotor intelligence, which also structures things perceived by bringing them into its schemes, in every case intellectual adaptation involves an element of assimilation, that is to say, of structuring through incorporation of external reality into forms due to the subject's activity. . .

There can be no doubt either, that mental life is also *accommodation* to the environment. Assimilation can never be pure because by incorporating new elements into its earlier schemes the intelligence constantly modifies the latter in order to adjust them to new elements. Conversely, things are never known by themselves, since this work of accommodation is only possible as a function of the inverse process of assimilation. We shall thus see how the very concept of the object is far from being innate and necessitates a construction which is simultaneously assimilatory and accommodating. . .

This leads us to the function of *organization*. From the biological point of view, organization is inseparable from adaptation: They are two complementary processes of a single mechanism, the first being the internal aspect of the cycle of which adaptation constitutes the external aspect. With regard to intelligence, in its reflective as well as in its practical form, this dual phenomenon of functional totality and interdependence between organization and adaptation is found again. . . The relationships between this organization and adaptation are consequently the same as on the organic level. – Piaget, *The Origins of Intelligence in Children*

We find this empirical character of cyclicity in the practical plane of actions as well. One of Piaget's most important findings was that mental development itself has a structure that takes the form of a central process of equilibration through cyclic interactions. Furthermore, regardless of how complex these interactions become, they can be broken down into a small set of basic interactions that come to constitute the "building blocks" of more complicated ones. While Piaget's abilities as a mathematician left something to be desired, his basic finding is not difficult to illustrate by means of mathematical diagrams. The two most elementary interactions appear in infancy after the child's first demonstrated abilities to coordinate his different sensorimotor modalities. These are illustrated in figure 5.6 and are called the Type I and Type II interactions.

Piaget makes a mathematical division between the subject's perceptions (observations) of his organized action schemes (either physical or mental) and perceptual observations of the object (whether external or ideated). The first is called the scheme observable *Obs.S* and the second is called the object observable *Obs.O*. These are mathematical constructs for an empirical theory.

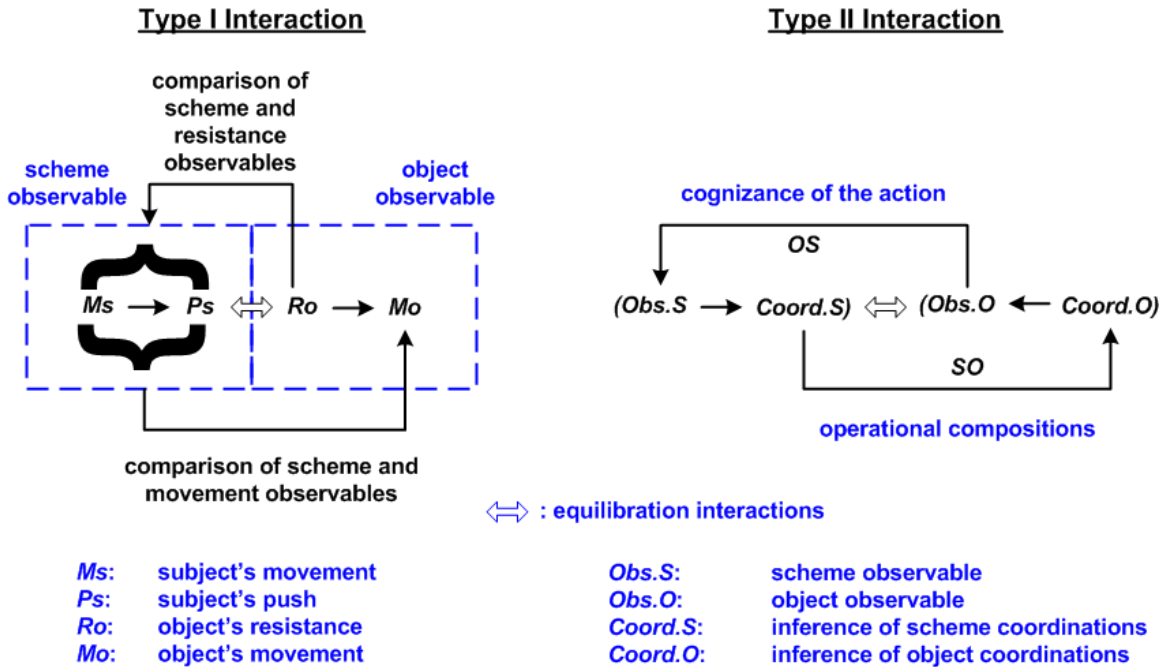


Figure 5.6: The Type I and Type II interactions

Neither the Type I nor Type II interaction structures are innate. As Piaget discussed in *The Development of Thought* and his earlier work, *The Grasp of Consciousness*, they make their appearance in infantile behavior only after the infant has succeeded in making his first crucial *real* division in understanding between his Self ("me") and the not-Self ("not-me"). As Piaget put it, this comes only after the infant recognizes the object as being distinct from his own actions.

The terminology he used requires some explanation. "Movement" must be interpreted to mean "change" of any sort. "Push" is a perception of the subject's own effort ("how hard he is working at it"). "Resistance" means in effect the affective perception of whether the object "submits" to the subject's intentions or "refuses to be manipulated" according to intent. The comparison illustrated in the Type I interaction figure running from *Ro* to the observable scheme is *in essence* an affective rather than an objective perception. Thus "resistance" is, in a manner of speaking, an aliment for the person's sense of satisfaction or dissatisfaction.

Type II interactions develop from the Type I interaction structure. Here the key new feature is the appearance of behaviors that implicate mental *inferences of coordinations* (for the scheme, *Coord.S*, and for the object's behavior, *Coord.O*). Inferences are not observable through receptivity (hence the coordinations are not observables); we can see that because the subject attributes inferences *Coord.O* to the nature of the object, what the diagrams of figure 5.6 represent are not what appears to the psychologist-observer but, rather, they refer to the subject's own structure of representations of his experiences.

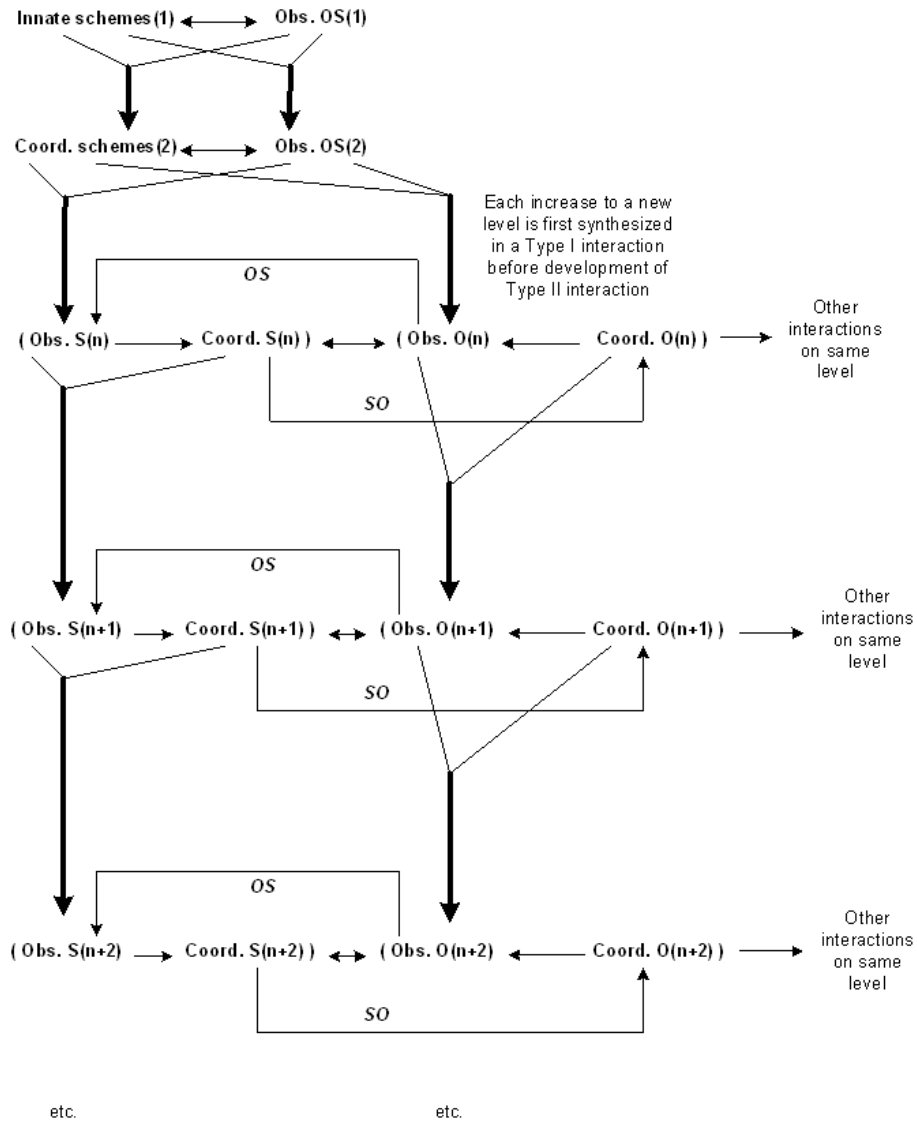


Figure 5.7: Hierarchical structuring of successive levels of more robust equilibrations

Two more additional processes appear in the Type II interaction. These are the cognizance of the action and the operational compositions. These are not observables nor, strictly, are they inferences. They are, rather, simpler interactions of the Type I form that have, in a manner of speaking, become "mobile" inasmuch as they were constructed earlier in some particular experience but have been made more generalized and assimilated into more complex situations. Mental physics tells us these representations are *practical representations of maxims* and belong to the manifold of rules that the human being's practical judgment constructs.

Furthermore, this organized development of practical mental structures of equilibration follows a developmental pathway, illustrated in figure 5.7, in which learning through experience constructs better and more robust practical rules (maxims) from previously structured rules.

Further, the lowest levels of interaction structures (level $n = 3$ in figure 5.7) themselves develop (initially as Type I interaction structures and later into Type II structures) from the sensorimotor coordinations of the infant prior to his cognizance of a distinction between his own actions and the object acted upon. Before this distinction is drawn (following the "me" vs. "not-me" division) the infant perceives only a totality, which Piaget denoted as *Obs.OS*. At level 1 are the uncoordinated individual sensorimotor modalities; at level 2 we see coordinations between the schemes of the different modalities, e.g. vision and prehension. At level 3 and higher we see the onset of a significant growth in sensorimotor intelligence that, epistemologically, is only possible from a significant growth and development of the infant's practical manifold of rules.

Piaget's findings are congruent with what mental physics tells us we must expect. However, it is necessary at this point to inject a metaphysical note into our discussion. Much of the American criticism of Piaget's theory is based on the relatively small population sizes he and his coworkers studied. The criticism is that he has not demonstrated "statistical sufficiency" with his data. This criticism reflects a peculiar Platonic prejudice that has become part of the landscape for the accepted practice of social science research. Statistical sufficiency, or the lack thereof, tells us *nothing at all* about the *phenomenon* under investigation. This mathematical creature is reflective of merely "how confident one can afford to be" about the finding. A statistic never tells anyone anything about nature; it only tells one how to bet on an hypothesis. A *statistic* is an arithmetic measure related to the number of times particular occurrences have been observed (and so a statistic overlaps the empirical world) but a *probability* is a pure entity of the mathematical world. No one has ever encountered, and no one will ever encounter, a raw probability in the world of experience. Measures of statistical confidence are *exclusively* grounded on probabilities.

The practical usage of probability and statistics, on the one hand, is *affective* because it goes to the user's subjective state of mind (confidence) and, on the other hand, is *heuristic* for the development of schemes of research ("what worked in the past *might* work again this time"). But one's reliance upon it, epistemologically, reflects nothing more than a degree of conviction. Kant put it thusly,

To the doctrine of the certainty of our knowledge belongs also the doctrine of the cognition of the probable, which is to be seen as an approximation to certainty.

By probability is to be understood a holding-to-be-true from insufficient grounds, which, however, have a greater relationship to the sufficient than the grounds of the contrary. Through this explanation we distinguish probability (*probabilitas*) from mere likeness (*verisimilitudo*), a holding-to-be-true on insufficient grounds insofar as these are greater than the grounds of the contrary.

The ground of holding-to-be-true can be *objectively* or *subjectively* greater than that of the opposite. Which of the two it is one can only find out by comparing the grounds of holding-to-be-true with the sufficient grounds; for then the grounds of holding-to-be-true

are greater than the grounds of the opposite *can be*. With probability, then, the ground of holding-to-be-true is *objectively* valid, while with mere likeness it is only *subjectively* valid. Likeness is mere magnitude of persuasion, probability an approximation to certainty. In probability there must always be a standard by which I can appraise it. This standard is *certainty*. For as I shall compare the sufficient with the insufficient grounds, I must know how much is required for certainty. Such a standard, however, falls away in mere likeness, since here I compare the insufficient grounds not with the sufficient but only with those of the contrary.

The moments of probability may be either *homogeneous* or *heterogeneous*. If they are homogeneous, as in mathematical knowledge, they must be *numbered*; if they are heterogeneous, as in philosophical knowledge, they must be *pondered*, i.e. appraised by their effect; this is but the overcoming of hindrances in the mind. The latter do not give a relationship to certainty but only of one likeness to another. Hence it follows that only the mathematician can determine the relationship of insufficient to sufficient grounds; the philosopher must be satisfied with verisimilitude as a merely subjective and practically insufficient holding-to-be-true. For in philosophical knowledge, because of the heterogeneity of the grounds, probability cannot be appraised; here the weights are, so to speak, not all stamped. Even of mathematical probability therefore one can properly say only that *it is more than half of certainty*. – Kant, *Logik*, 9: 81-82

The distinction between probability and verisimilitude seems to be one of which a great many science students, professors, and researchers today appear to be blissfully unaware. With today's availability of standard statistical analysis software, it has become a common experience for your author, as a neuroscience professor, to see graduate students presenting statistical results from their experiments in which they innocently report statistical levels of confidence – a number generated by the software package – that are so astoundingly high that they far exceed the measurement accuracy capabilities of the instruments that were used to perform the study. Here is rich fertilizer for growing a Plato's garden of illusory pseudo-knowledge.

Probability has objectively valid employment in *mathematical* science, but it is important to always remember that this mathematical world and its products can only establish and be established as *hypothesis* and not as certain fact. It presents as a hypothetical-practical rule for observable occurrences (phenomena). If probability is reified – which happens with undisciplined frequency in science today – the explanation is divorced entirely from objectively sufficient grounds for holding-to-be-true. Probability cannot be made into a *thing* in the world of experience. Conclusion drawn from a reification is mere verisimilitude which, no matter how subjectively appealing, is not a valid scientific *fact* but merely an *art* of practice.

What we must do instead is always carefully examine the theoretical methodology by which we identify those principal mathematical quantities used for establishing correspondence between a mathematical model and real phenomena. Otherwise we have nothing more than a rationalist's version of mathematical vitalism with "probability" replacing "life" as, to paraphrase Bernard, "the greater darkness used to explain darkness." This, in point of fact if not philosophy, was a primary factor driving the development of set membership theory, the mathematical methodology

for applying Slepian's principle, in the late 1960s. This has *not* been done by Piaget's critics. Without a Critical examination directed to the proper identification of principal quantities, what blind reliance on statistical arguments is most likely to do is produce lovely and very satisfying transcendent illusions. So much for the American statistical objections to Piaget.

§ 4. The Judgmentation Cycle II: Rational Context

The cyclicality exhibited empirically across a wide scale of phenomena appears as a basic functional mechanism in our understanding of Nature. According to Critical epistemology this must implicate some deeper underlying ground in mental physics. Mathematical description of this underpinning is what figure 5.5 above represents. The two different cycles depicted in that figure can be regarded as "inner" (cycle of thinking) and "outer" (cycle of reasoning) loops of mental activity. The cycle of thinking pertains to understanding objects. The various processes of synthesis depicted in it correspond to functional processes illustrated in figure 5.1.

Figure 5.8 provides a brief and simplified illustration of the functional operation of this cycle as it pertains to the construction of the manifold of concepts. The operations depicted here, and the roles played by Reason and reflective judgment, are explained in more detail in *Principles of Mental Physics*. The figure is best viewed conjointly with figure 5.4 above.

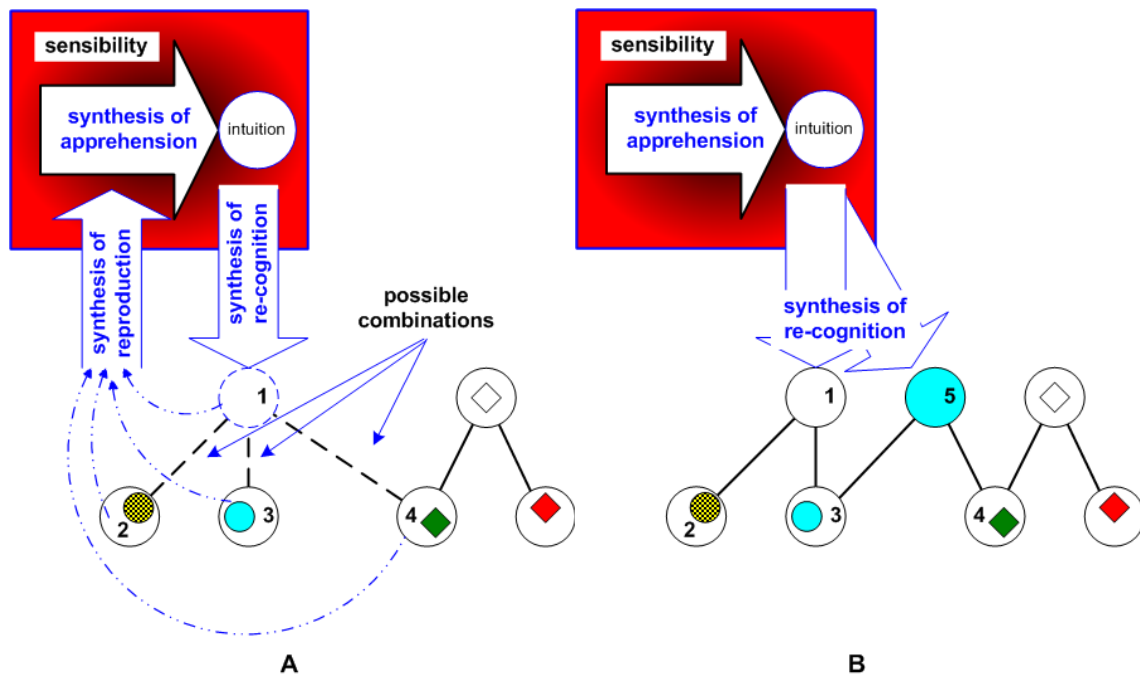


Figure 5.8: Simplified illustration of construction of the manifold of concepts during the cycle of thinking. (A) Introduction of a new general concept (1) into the manifold as a concept of belief by an act of reflective judgment. (B) Connection of concept (1) in a context within the manifold by acts of determining judgment. The figure also illustrates introduction and connection of another general concept (5) during this process.

For the purposes of this treatise, the points we wish to emphasize here are the following. The various processes in the cycle of thinking (figure 5.5) can be functionally regarded as *processes of transformation* by which representations in the various logical divisions of *nous* are used to make aliments for other processes in the overall structure. These processes are thoroughly co-determining (because all these logical processes are understood as coexisting in time) and so the cycle construct illustrates the immediate versus mediate transformative connections of the processes with each other. The Nature of human understanding is such that human cognition of the appearance of a process is temporal in *subjective time*, but for *theoretical understanding* we must regard the *time parameter* in our mathematics as mathematical *objective time*, i.e., as a mere ordering construct and not as a reified *thing* (a "flow," an "arrow," Bergson's "pure duration," etc.). Newton reified objective time in his physics; Einstein pointed out the *epistemological error* of doing this in his first paper on the special theory of relativity⁷:

If we wish to describe the *motion* of a material point, we must give values of its coordinates as functions of time. Now we must bear carefully in mind that a mathematical description of this kind has no physical meaning unless we are quite clear as to what we understand by "time." We have to take into account that all our judgments in which time plays a part are always judgments of *simultaneous events*. If, for instance, I say, "That train arrives here at 7 o'clock," I mean something like this: "The pointing of the small hand of my watch to 7 and the arrival of the train are simultaneous events."

It might appear possible to overcome all the difficulties attending the definition of "time" by substituting "the position of the small hand of my watch" for "time." And in fact such a definition is satisfactory when we are concerned with defining a time exclusively for the place where the watch is located; but it is no longer satisfactory when we have to connect in time series of events occurring at different places, or – what comes to the same thing – to evaluate the times of events occurring at places remote from the watch. – A. Einstein, *Zur Elektrodynamik bewegter Körper*

Einstein's fundamental point here is that "time" in physics is a mathematical construct one *defines* and which can *only* be placed in the world of pure mathematics (hence is and must be called "objective time"). It is *not* a *thing* existing as a *substantially real* entity in *physical* nature. (Interestingly, St. Augustine came to this same conclusion in the 5th century and published it in *Confessions*, albeit with far less precision than Einstein.) In the theory of relativity physics *prescribes* certain formal rules *to* mathematics (e.g., equations of motion must be *made* invariant to changes in coordinate systems) and then physics is *thereafter* constrained to remain true to the mathematical consequences that emerge from the original prescription. To reify *any* mathematical construct that lacks all possibility of being *experienced through receptivity* is *always* a Platonic illusion and a transcendental error. Newton's objective time *is* such a fiction.

⁷ A. Einstein, "Zur Elektrodynamik bewegter Körper," in *Annalen der Physik*, 17, 1905. An English translation is provided as "On the Electrodynamics of Moving Bodies," W. Perrett and G.B. Jeffery (tr.), in *The Principle of Relativity*, NY: Dover Publications, 1952.

This same consideration applies to representation of the cycle of reasoning. The nature of human understanding is that empirical cognition is *presented as an intuitive form of perceptual ordering* we must properly call *subjective* time. Subjective time is a form *synthesized* as an *ordering process* by the synthesis in sensibility. This presentation, *as inner sense*, is the epistemological *ground* making possible *all* our theoretical constructs of *objective* time. Because the synthesis of the pure intuition of time is a "happening" in the synthesis in sensibility, whereas the other blocks in figure 5.1 stand outside this synthesis, it is not permissible with real objective validity to ascribe to any of the mathematical operations of these processes any notion of subjective time. "Time" in the mental cycles of thinking and reasoning is a mathematical parameter *constructed and employed to understand them theoretically*. If we need to construct mathematical time to do strange things (e.g. run backwards or be a multi-dimensional timescape rather than only an "arrow") we are at liberty to do so *provided* we never try to reify this construct and *misplace* it as a thing "in the physical world." It is mathematics, not physics.

The consequence of this in mental physics is this: Whenever we connect mental dynamics in the context of human experience we *must* regard all the acts of these mental processes as, so to speak, "occurring all in the same instant" and all *at the same moment in empirical subjective time*. It is not epistemologically correct to look at figure 5.5 and say something like "*first* reflective judgment acts *and then* practical Reason acts *and then &etc.*" and interpret this to mean any sort of *temporal flow*. The sequencing is merely *logical* and depicts *only* what processes provide representations transformed into aliments to what other processes. Representations by all the processes of *nous* are reciprocally co-determined. Advanced theoretical methods in system theory, such as the Hamilton-Jacobi-Bellman equation of optimization theory and the practical computing technique of dynamic programming, obtain their epistemological correctness from this metaphysic. The constructs within Critical epistemology are those *necessary for the possibility of human experience* as human beings come to know experience. Critical epistemology does for all sciences what Einstein's relativity epistemology does for physics: prescribe rules for the proper employment of mathematical reasoning about Nature.

What separates moments in subjective time are *actions*. The Critical *Realerklärung* of *action* (in German, *Wirkung*; in Latin, *actio*) is *change in appearance of accidents*. Without changes in the appearances of sensible accidents there is no epistemological basis for differentiating one moment in time from another. Were one to fantasize about a universe without changes in the appearances of accidents, it would be a universe without time. The *empirically proper* way to look at judgmentation (the cycle of reasoning) is this: The cycle of reasoning *acts* to produce a cognition of objective appearances, a modified structure of understanding in the manifold of

concepts, an affective perception of the human being's subjective state in the manifold of Desires, an appetite from the process of appetitive power, a modification of the human being's structure of practical rules (the manifold of rules) by practical judgment, a determination of motoregulatory expression in *psyche*, a determination of the orientation of thinking by ratio-expression in speculative Reason, and what we can figuratively call a "pulse of empirical consciousness" that marks a moment in subjective time by the synthesis of apperception⁸. The *practical result* of this singular act is action caused by the human being. With action comes change in the appearance of accidents and thus the empirically-next act of judgmentation.

It is worthy of note that an empirical hypothesis sharing a number of the characteristics of this "pulse of consciousness" idea has been put forward by noted neurologist A.R. Damasio:

Core consciousness is generated in pulse-like fashion for each content of which we are to be conscious. It is the knowledge that materializes when you confront an object, construct a neural pattern for it, and discover automatically that the now-salient image of the object is formed in your perspective, belongs to you, and that you can even act on it. You come by this knowledge, this discovery as I prefer to call it, instantly: there is no noticeable process of inference, no out-in-the-daylight logical process that leads you there, and no words at all – there is the image of the thing and, right next to it, is the sensing of its possession by you. – Damasio, *The Feeling of What Happens*

Damasio's theory is not entirely free of epistemological shortcomings and does exhibit some ontological defects. However, it exhibits fewer of these than other theories psychologists and neuroscientists have proposed. Damasio does not ignore epistemological concerns and his work resembles that of Kant and James. He merely does not employ Critical epistemology, and in those places where his model goes astray this is due to non-appliance of the Critical metaphysics.

The practical significance of the cycle of reasoning is this. It leads us to the proper Critical explanations of the ideas of *values*, *value structure*, *motivation*, and a key factor in the determination of human behaviors called *the motivational dynamic*. These are rational factors that underlie the determination of choice by the appetitive power of practical Reason. However, to properly understand these intellectual factors, it is first necessary to examine the relationship between the physically unobservable acts of *nous* and their co-determined expression in *soma*.

§ 5. The Scientific Issues of Causation and the Existence of Objects

System theorists in practice often encounter cases where whatever determines the behaviors of a system cannot be immediately observed simply by looking at what the system does. Put in other

⁸ The *practical real explanation* of empirical consciousness is that empirical consciousness is the mental representation that *another* representation exists and is to be attended to by the processes of *nous*. Empirical consciousness is, so to speak, a "higher level" of mental representation that integrates the divers acts of *nous*. This representational "pulse" (or, perhaps better, "impulse") *defines* a moment in subjective time.

terms, the appearances of the system's actions are not appearances of the efficient cause of those actions. This has an important bearing on our understanding of the rational factors of self-determination we will begin taking up in the next section. Before getting to that, though, there are some important Critical ideas we must better appreciate. To illustrate them we will use physics as our example case.

Recall that causality is the notion of the determination of a change by which the change is established according to general rules. Cause is the notion of the agency of a substance (regarded as an object) insofar as the object is regarded as containing the ground for the actuality of its own changes. A *causatum* is a rule for the determination of a change under the condition of some cause that serves as the ground for invoking that rule. An action is a change in the appearance of accidents. A *ground* is that upon which something follows in a necessary way, and hence is a condition for other necessary conditions of an object. This triumvirate of cause-*causatum*-causality notions is a necessary presupposition in science because if one denies the triumvirate this is equivalent to saying there is and can be neither human understanding of nature *nor* human *mis*understanding of nature. That the latter actually exists and that the former does exist to some degree are both such clearly evident facts that the absurdity of denying this triumvirate of notions is obvious. Science is not a vain and pointless exercise.⁹

However, knowing that a cause of an effect *necessarily* exists and knowing *the nature of* that cause are two completely different issues. To appreciate this, my dear reader, you need look no farther than yourself. Assuming you have at least one non-paralyzed arm with at least one working finger at the end of it, and that you are not suffering from locked-in syndrome (in which case you cannot be reading this book), you know that you can scratch yourself if you so wish. But *how* you possess this power – what it is about your own nature by which you have this ability – is something you do not really know (unless you happen to have already carefully studied mental physics, biology, and psychology).

Whenever one makes a proposition regarding the existence of something, it is Critical to understand there are two quite different factors in existence propositions. The first concerns the declaration of a *what* as the object of the proposition ("What exists? What am I thinking about?").

⁹ Probably the most famous argument for why we should be skeptical that cause and causation "really exist" was put forth by David Hume in his *Treatise on Human Nature*. Although Hume worked entirely within the framework of British empiricism, his arguments were none the less devastating for rationalism. What Hume actually accomplished was to demonstrate beyond doubt that when one's metaphysical foundation is ontology-centered there is utterly no way to either prove or demonstrate that cause and causality actually exist in nature. Skepticism is all that is left. It was his powerful argument that led Kant to try a different approach altogether, namely to make metaphysics epistemology-centered instead. By doing so he was able to overcome Hume's objections and thereby rescue not only metaphysics but science as well.

The second concerns knowledge of *how* the former exists ("How does it exist? What is its nature?"). *Science* in its real practice is concerned with *identifying* the former and *understanding* the latter. The clear distinction between these two aspects of existence is easy to mislay in English because we have only one word, "existence," homonymously used for both aspects. The context is easier to keep firmly grasped in German, which has two distinct words for "existence" at its disposal. The first, pertaining to the context of the "what" aspect, is *Dasein* (which if taken literally straight over into English would be equivalent to saying "there be"). The second, pertaining to the "how" aspect, is *Existenz*. Both words are used as technical terms in Critical metaphysics. When one infers the existence of a cause from the actuality of an effect, one is making a proposition declaring the *Dasein* of an object. When one proposes a natural rule or law dealing with accidents of appearances of that object, this is a proposition about its *Existenz*. The subject in any predication is a declaration of *Dasein*; the predicate is a declaration of *Existenz*.

Science *in practice* never really questions the objective validity of either the notion of cause or the notion of causality. When a science is confronted with having two non-equivalent competing hypotheses regarding one and the same phenomenon, the disagreement does not lie in either the notion of cause or the notion of causality. The disagreement is over the *causatum* (which is why this third notion is important). It is a disagreement over the correct *rule* linking cause and effect.

When quantum mechanics was discovered and developed early in the 20th century, it sparked an intense and often agonizing debate over whether or not cause and causality were really proper scientific ideas. Physicists discovered that there were phenomena (e.g. the photoelectric effect, black body radiation, "wave-like" properties of particles, "particle-like" properties of waves) that could not be explained by the classical methods of mechanistic determinism. They found that they could explain these phenomena *if* they introduced "unnatural" ideas of mysterious "entities" (de Broglie waves, probability amplitudes) and forced themselves to be content with statistical interpretations and "probabilistic laws" of nature. These ideas struck many of them as paradoxical in the least and others of them as so metaphysically repugnant they took the position that the new quantum mechanics was "incomplete" – that it was "missing something" (this hypothesis later came to be known as "hidden variable theory"). It was an ontological crisis of the first magnitude because, as physicist George Gamow put it,

But in spite of the fact that the new Quantum Theory . . . gave a perfect mathematical description of atomic phenomena, it failed to illuminate the physical picture. What physical meaning should be ascribed to these mysterious waves, to these baffling matrices? How are they related to our common sense notions about matter and the world we live in? The answer to this question was given by Heisenberg in a paper published in 1927. . .

. . . They do not represent any physical reality. The de Broglie waves have no mass

such as we find in the case of electromagnetic waves, and whereas, in principle, one can buy half a pound of red light, there does not exist in the world an ounce of de Broglie waves. – George Gamow, *Thirty Years That Shook Physics*

Having just said de Broglie waves "do not really exist" Gamow (and Heisenberg, and others) then went on *to explain what they really were* (they were likened to "widened mathematical lines"). Now stop and think about this for a second. If de Broglie waves "do not really exist" it is a flat contradiction to then say they are *anything*. Nothing better than this illustrates the ontology-centered character of the pseudo-metaphysics physicists commonly employ. What Gamow and others should have clearly understood is that we have a physical understanding of what these objects *are not*. All objects are real in some contexts, unreal in others, and non-real in yet others. To say an object exists in the *Dasein* connotation is to say nothing else than our understanding *has a real context*. For a scientist to say it does not exist is to say the object lacks objectively valid real context *in some forms of Existenz*, i.e., that "in *this* context it is unreal or non-real."

It is interesting to review Heisenberg's 1927 arguments. What we find is that he shifted himself out of the physicist's usual ontology-focused perspective and took up an epistemological view of the situation *that justified the formal* (mathematical) *practices* of quantum physics. De Broglie waves do exist: they are denizens of the world of mathematics. But *as objects* they are *not causes*. Since 1927 physicists have continued to search for the object-that-stands-as-a-cause and there are numerous speculations now in the mainstream ("virtual photons" and other "boson particles") or seeking mainstream acceptance (the "Higgs boson") – and *all of them* are denizens of the world of pure mathematics. An epistemology-centered scientist has no problem with this. As Kant said, a transcendental idealist is also an empirical realist. He does not find quantum mechanics to be paradoxical in the least. Only the ontology-centered person *makes paradoxes for himself* out of the empirical laws of quantum mechanics.

The old-timers who pioneered the development of the quantum theory were able to grasp (or in some cases to at least juggle) a *practical* understanding of this situation. Unfortunately, over the passage of years methodological familiarity gradually calcified this metaphysical appreciation into an unreflective pseudo-metaphysical dogma and a doctrine for excusing ignorance. The younger members of the physics community gradually began to turn back towards a mathematical Platonism that is now rapidly becoming a cornucopia for very pretty and objectively groundless science-griffins. Like the "natural history" of Pliny the Elder, this road dead ends in mythology.

What did quantum theory accomplish in fact? It did *not* propose explanations for either cause or causality in atomic physics. What it *did* do, and with remarkable *practical* success, was *formulate the causatum*. And this is all that any special science is *expected* to do. When the community of physicists finally come to understand this with clarity and conviction, their science

will reach the end of a prolonged naive adolescence. The rest of us will know this has transpired by two behavioral marks: (1) the *practice* of physics will abandon its present-day puppy love of specious Platonic speculations, and (2) physicists will stop claiming their special science is "the queen of the sciences." It isn't, it never has been, and it never will be.

Turning from this to mental physics, we find ourselves in a very similar boat. The objects of *nous* are, one and all, denizens of the mathematical world. The objective validity of the theory of *nous* rests entirely upon observable effects – accidents in the physical world of human behavior. Like quantum physics, the proper practice of mental physics seeks the *causatum* by which *mind* as cause links to accidents of *body* as effect (and *vice versa*; *nous* and *soma* are co-determining). A quick glance back at figure 5.1 ought to sufficiently illustrate where we seek this: *psyche*, the faculty of animating principles of *nous-soma* reciprocity. The special empirical science tasked with elucidating these principles in detail is what *properly* should be called psychophysics. We need not chase into this special science in order to satisfy the goals of our present treatise though. It is enough for our topical purposes to briefly examine the bridgehead point where the logical division of *psyche* meets up with the logical division of *nous*. This bridgehead is provided by an applied principle of mental physics called *the synthesis in continuity*.

§ 6. The Synthesis in Continuity

§ 6.1 Analytic Representation of Objects and the Representation of *Psyche*

Representation is a primitive in Critical epistemology. This is because the only way to explain representation is by *making* a representation. Representations are inherently mathematical ideas used for explaining objects with sufficient clarity to make the concept of the object *useful in application*. Hence, a representation is always practical at its roots even when its application is theoretical. In general any sort of figure, drawing, or diagram is an example of a representation. Alphabets, words, and other linguistic constructs are likewise representations. In the methodology of Critical epistemology there are two specific types of representations of basic importance: the synthetic representation and the analytic representation. We saw an example of the synthetic representation, figure 5.3, earlier. Now the analytic representation is introduced. We will use both of these in the next subsection to explain the synthesis in continuity.

An analytic representation begins with the concept of the object being represented and logically divides this object into a "what it is" term and a "how it is" term. The "what" term is called the *matter of composition* of the object or, for brevity, its *matter*. The "how" term is called the *form of connection* of the object, or simply its *form*. This pertains to how the concept is connected with other concepts that establish its real contexts (and so is also called its *nexus*).

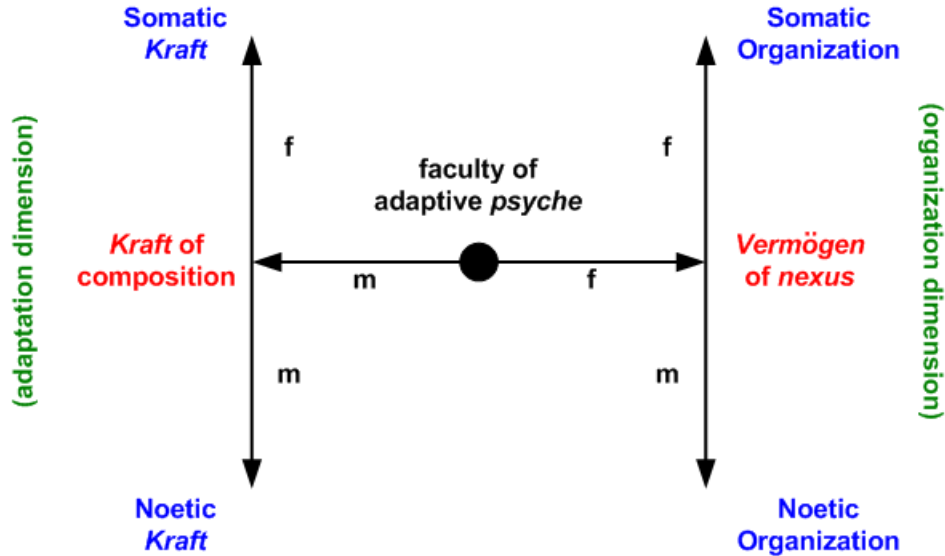


Figure 5.9: Second-level analytic representation (2LAR) of the faculty of *psyche*. m = matter, f = form

This division is called a first-level analytic representation or 1LAR. The division process can be continued however many times it is needful in order for the representation to explain the object represented with sufficient clarity for one's purpose in making the representation. A 1LAR is further divided into a *form of the matter of composition* (called Quantity), a *matter of the matter of composition* (called Quality), a *form of the form of connection* (called Relation), and a *matter of the form of connection* (called Modality). These general titles of Quantity, Quality, Relation, and Modality make up what is called the transcendental topic of representation, and such a representation is called a second-level analytic representation or 2LAR. The four titles can also be given specifically descriptive labels for specific *contexts* in order to convey what is special or distinctive about the object being represented. Figure 5.9 is a 2LAR representation of the logical division of *psyche* in the Critical model of the human being. Here Quantity is labeled somatic *Kraft*, Quality is labeled noetic *Kraft*, Relation is labeled somatic organization, and Modality is labeled noetic organization.

Additional analytic divisions can be performed on a 2LAR to produce a 3LAR, a 4LAR, etc. After some finite number of steps, however, the analyst will stop dividing the representation because he will deem it sufficient for purposes of explanation. Because the representation of the object is the *combination* of all these endpoints, the analytic representation is not complete until rules are provided for re-integrating the concepts represented at each endpoint in the division. This re-integration is always a synthesis. Because every synthesis requires three terms, as figure 5.3 illustrated, each endpoint will always have *three* synthesis rules and these rules are called the *momenta* of their particular titles. Thus a 2LAR will have 12 *momenta* functions and each

particular *functional combination* of the object's representation will use one *momentum* from each of the four titles in the re-integration. A 2LAR, therefore, provides a total of $3^4 = 81$ interrelated functional representations for its object. A 3LAR has eight endpoints and $3^8 = 6,561$ interrelated functional representations of the object.

Psyche is the faculty of animating principles for *nous-soma* reciprocity. Here the adjective *animating* is used because these principles deal with how acts of *nous* are manifested in *soma* and how accidents of *soma* co-determine noetic activities. The co-determined activities, regarded as functional capabilities, are aimed at establishing an equilibrium between acts of assimilation and acts of accommodation and for this reason *psyche* regarded as an object is called **the adaptive psyche**. An adaptation is an equilibrium between assimilation and accommodation.

These principles are not to be regarded in terms of some sort of *communication* between mind and body because the mind-body division is a logical, not a real, division; the famous "problem of mind-body communication" often discussed by philosophers is an illusory problem because one does not properly say *one* thing "communicates" *with itself*. The *technical* idea of communication is an idea that inherently calls for *three* things: a *source* that sends a "message," a *sink* that receives this, and a *medium* through or by which the "message" is sent from the first thing to the second thing. Any other use of the word "communication" is a mere metaphor¹⁰. A human being is *one* thing and neither has nor needs a medium to effect the thorough-going reciprocity of merely *logical* parts.

As we saw earlier, adaptation and organization are, figuratively speaking, two sides of one and the same coin in every living thing. These can be called the *dimensions of organism*. At the 1LAR division of *psyche* the matter of composition is called the adaptation dimension. Because *psyche* is an animating faculty its matter (it's "what be it?") is action in effecting *nous-soma* reciprocity and so this pole in the 1LAR is called the psychic *Kraft*¹¹ of composition. Carrying on the division to a 2LAR we obtain somatic *Kraft* as Quantity in *psyche* and noetic *Kraft* as Quality in *psyche*. Somatic *Kraft* is the power of *soma* to produce or suffer effects. Its animating principle is: *reciprocity through somatic Kraft is determination of a condition, called an elater animi* (literally, "driver of mind"), *through which the structuring of somatic actions expresses acts of aesthetical reflective judgment insofar as these acts judge the form of a system of values, desires, and*

¹⁰ In any science the precise technical use of the words we employ is vital. To paraphrase the great 18th century chemist Antoine Lavoisier, we cannot improve a science without improving its vocabulary and we cannot improve its vocabulary without also improving the science. Casual, careless, or sloppy usages of scientific terminology damages a science: if you do not say what you mean, you will not mean what you say. If you *deliberately* say what you do not mean you make yourself a liar.

¹¹ The German word *Kraft* translates into English as "power." It denotes not just the ability to do something but the actual *doing* of it. The idea of kinetic energy in physics contains an idea of a *Kraft*.

interests. Noetic *Kraft* is the power of *nous* to produce or suffer effects. Its animating principle is: *the co-determination of somatic representations and the affective perceptions of Quality in reflective judgment are energetics for understanding and reasoning in the structuring of a value system and for the orienting of activity*. We see in these principles the rational factors of value and value system entering into the self-determination of choices and behaviors.

The other pole in the 1LAR of *psyche* is its form of connection. Again, because *psyche* is the faculty of animating principles this pole deals with the ability of *psyche* to organize the activity of the human being. This ability is also a type of power but, in contrast to *Kraft*, it concerns the ability regarded as a *capacity*, i.e., the *potential power* to act. The technical term for this is *Vermögen*, and we use this term to distinguish a potential power from its actual exercise (*Kraft*). Hence the form of *psyche* ("how it be") is called the *Vermögen* of *nexus*. Carrying the division to a 2LAR we obtain somatic organization as Relation in *psyche* and noetic organization as Modality in *psyche*. Somatic organization is the somatic structure of adaptation in *nous-soma* reciprocity. Its animating principle is: *motivation is the accommodation of perception and motoregulatory expression is assimilation of perception*. Noetic organization is the noetic structure (structure in *nous*) of adaptation in *nous-soma* reciprocity. It is the nexus of meanings expressed in the reciprocity of *nous* and *soma*. Its animating principle is: *equilibration is the activity leading to closure of the cycle of affective interactions in a state of equilibrium*.

We see first of all in this dimension the Critical *Realerklärung* of motivation. Those readers who are psychologists might find this real explanation somewhat startling because it is not one of usages of this term in present day psychology. The reason for this difference is relatively simple although the deduction is not (this deduction is discussed in detail in *Principles of Mental Physics*). Psychology's current usages of the term are ontology-centered. Not to be too blunt about it, but ontology-centering is precisely why, in Reber's words, the term has always been "definitionally elusive." Critical motivation is explained functionally and in terms of *mental* objects. Motoregulatory expression, likewise, gets its *Realerklärung* from the principle.

We see next the organizational role of *nous-soma* reciprocity for the root meanings of mental representations. The cycle of affective interactions, illustrated in figure 5.10, is the succession of

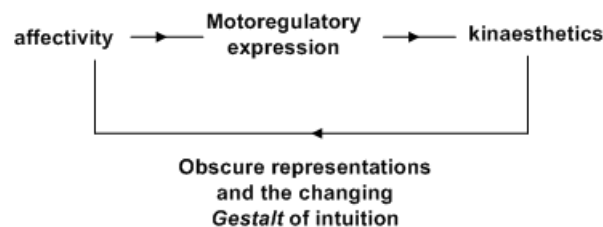


Figure 5.10: The cycle of affective interactions

sensorimotor activities providing the ground from which both the empiricist and rationalist philosophers of earlier times were able to obtain their guesses concerning the nature of "impression" and "expression" in their failed earlier attempts to understand mind. The cycle is the structure for what Kant called "the free play of imagination and understanding."

Kinaesthetics can loosely be called "body data"; it is receptivity of effects of motoregulatory expression and provides the raw *materia* from which the synthesis in sensibility *makes* its representation of the form (*Gestalt*) of an intuition. This form is mathematical and is a *topological structuring* of sensations. Critical theory calls this *the intuition of space*. Empirical intuition of space is not, as many have erroneously believed, an innate geometry nor is it some kind of mythical "cookie cutter" with which mind "stamps out" intuitive representations from some pseudo-metaphysical cookie dough. The synthesis in sensibility is an *active* process and the topological structuring of intuition *generates topologies* and is applied in *every* sensory modality.

In this regard it is noteworthy that empirical psychology has, rather impressively when one thinks about it, found empirical evidence of this topological character of intuitions. Piaget and Inhelder wrote,

[Abstract] geometrical analysis tends to show that fundamental spatial concepts are not Euclidean at all, but 'topological.' That is to say [they are] based entirely on qualitative or 'bi-continuous' correspondences involving concepts like proximity and separation, order and enclosure. And, indeed, we shall find that the child's space, which is essentially of an active and operational character, invariably begins with this simple topological type of relationship long before it becomes projective or Euclidean. – Piaget and Inhelder, *The Child's Conception of Space*

Finally, noetic organization is organized as a *nexus* of meanings. We cannot with straight face say any representation represents *anything* unless that representation is vested with a meaning of some sort. If we think of an intuition in terms of it being a symbol for something, this symbolic function is representation *as* a meaning. But what does "meaning" mean? Reber's *Dictionary* has an extensive entry for "meaning." Every single usage listed there is fundamentally linguistic, ontology-centered, and – not to put too fine a point on it – merely nominal and quite useless psychologically. At their roots, all meanings are practical and their epistemological foundation rests on action. The *practical* meaning of an object is "what can be done with it." This was also the conclusion of Piaget and Garcia in their exploratory work, *Toward a Logic of Meanings*. Mental physics says they were on the right track although Piaget died before the project could come to fruition. Santayana too, with the impressive if not especially technical insight he so often demonstrated, came very close to this same conclusion. He wrote,

The problem for the spirit is how it could ever come to pick out one body or another for its cynosure and for its instrument, as if it could not see save through such a little eye-

glass and in such a violent perspective. . . This answer is that spirit, with knowledge and all its other prerogatives, is intrinsically and altogether a function of animal life; so that if it were not lodged in some body and expressive of its rhythms and relations, spirit would not exist at all. . .

When the proverbial child cries for the moon, is the object of his desire doubtful? He points at it unmistakably; yet the psychologist (not to speak of the child himself) would have some difficulty in recovering exactly the sensations and images, the gathering demands and fumbling efforts, that traverse the child's mind while he points. Fortunately all this fluid sentience, even if it could be described, is irrelevant to the question; for the child's sensuous experience is not his object. If it were, he would have attained it. What his object is, his fixed gaze and outstretched arm declare unequivocally. His elders may say that he doesn't know what he wants, which is probably true of them also; that is, he has only a ridiculously false and inconstant idea of what the moon may be in itself. But his attention is arrested in a particular direction, his appetite flows the same way; and if he may be said to know anything, he knows there is something there which he would like to reach, which he would like to know better. He is a little philosopher; and his knowledge, if less diversified and congealed, is exactly like science.

The attitude of his body in pointing to the moon, and his tears, fill full his little mind, which not only reverberates to this physical passion, but probably observes it: and this felt attitude *identifies the object* of his desire and knowledge *in the physical world*. It determines what particular thing, in the same space and time with the child's body, was the object of that particular passion. – Santayana, *Scepticism and Animal Faith*

§ 6.2 The Continuity of *Nous* and *Psyche*

Reflective judgment is represented using a 3LAR. From this level of representation we also are able to represent the synthesis in continuity as shown in figure 5.11 below. At the first 1LAR

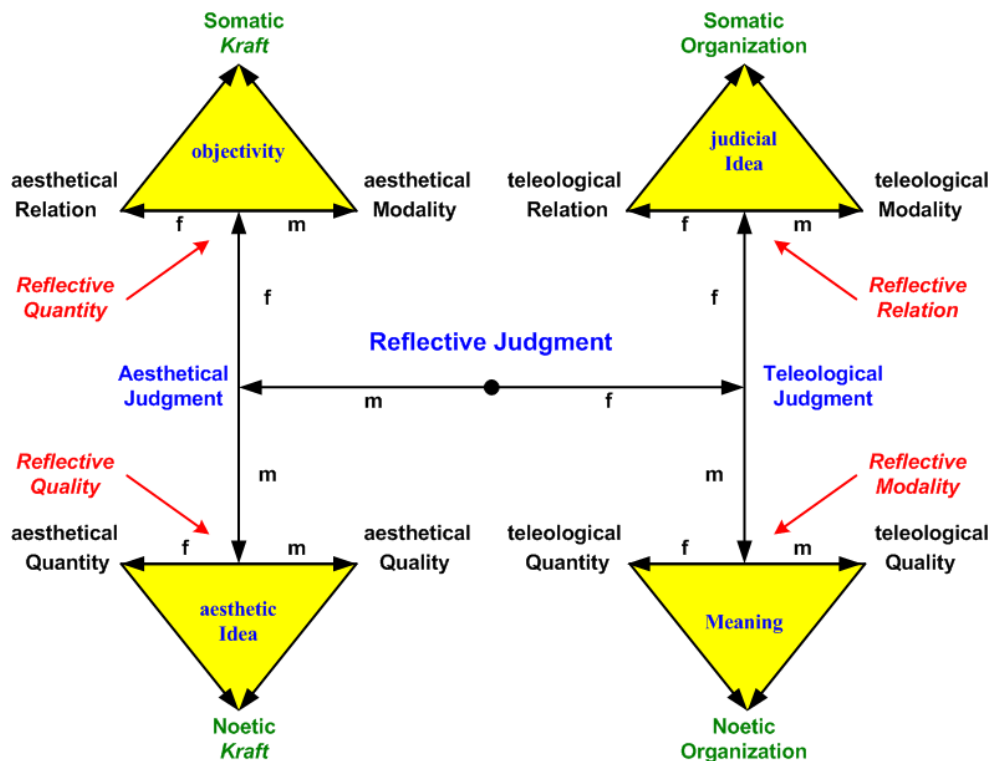


Figure 5.11: Reflective judgment and the synthesis in continuity of *nous* and *psyche*

division reflective judgment is characterized in terms of matter by a capacity for aesthetical judgment and of form by a capacity for teleological judgment. Both capacities are affective, i.e. pertain to the feeling of *Lust* and *Unlust* and the effect of the feeling upon the impetuous acts of the human being, respectively. Proceeding to the 2LAR division gives us the four heads of Quantity, Quality, Relation, and Modality in reflective judgment overall. Carrying the division one more step to a 3LAR provides 2LAR descriptions for both aesthetical and teleological reflective judgment and provides matter and form terms at each point in the 3LAR of reflective judgment overall needed for the synthesis in continuity, which joins judgment to *psyche*.

§ 6.2.1 The Synthesis of Objectivity

The conjunctive synthesis joining reflective Quantity with psychic Quantity (somatic *Kraft*) is the *synthesis of objectivity*. Human beings are born with *no* innate ideas of objects *whatsoever*. If we were, a baby would exhibit behaviors that could only be explained by its possession of innate objective ideas. The innate ideas hypothesis is *testable*. When it *is* tested, the outcomes contradict the hypothesis. Piaget was the first to empirically demonstrate this but the issue has been re-tested many times and the outcomes continue to support his first findings.¹² He wrote,

To understand how the budding intelligence constructs the external world, we must first ask whether the child, in its first months of life, conceives and perceives things as we do, as objects that have substance, that are permanent, and of constant dimensions. If this is not the case, it is then necessary to explain how the idea of an object (object concept) is built up. The problem is closely connected with that of space. A world without objects would not present the character of spatial homogeneity and of coherence in displacements that marks our universe. Inversely the absence of "groups" in the changes of position would be equivalent to endless transformations, that is, continuous changes of states in the absence of any permanent object. . .

A question of this sort conditions all other questions. A world composed of permanent objects constitutes not only a spatial universe but also a world obeying the principle of causality in the form of relationships between things, and regulated in time, without continuous annihilations or resurrections. Hence it is a universe both stable and external, relatively distinct from the internal world and one in which the subject places himself as one particular term among all the other terms. A universe without objects, on the other hand, is a world in which space does not constitute a solid environment but is limited to structuring the subject's very acts; it is a world of pictures, each one of which can be known and analyzed but which disappear and reappear capriciously. From the point of view of causality it is a world in which the connections between things are masked by the

¹² There are members of the American psychological community who have written papers in which the claim is made that evidence of innate ideas in infants is found. There is in fact *no* connection established between the actual observed evidence and the innate ideas conclusion. What one finds instead is a bald speculative leap that can be paraphrased as "it *could* mean this!" But "it might have happened this way" is not a valid argument in the practice of science. These papers are superficial and lack critical thinking in the analysis. The arguments are no more scientifically sound than those in Plato's *Meno*, in which "Socrates" questions a slave boy on the subject of geometry and thereby "proves" the boy must have existed in Plato's peculiar heaven before he was born on earth. One thing *every* ontology-centered metaphysical basis has in common with every other one is that, ultimately, a god must be called upon to come to its rescue.

relations between the action and its desired results; hence the subject's activity is conceived as being the primary and almost sole motive power. As far as the boundaries between the self and the external world are concerned, a universe without objects is such that the self, lacking knowledge of itself, is absorbed in external pictures for want of knowing itself; moreover, these pictures center upon the self by failing to include it as a thing among other things, and thus fail to sustain the interrelationships independent of the self.

Observation and experimentation combined seem to show that the object concept, far from being innate or given ready-made in experience, is constructed little by little. Six stages can be discerned, corresponding to those of intellectual development in general. During the first two stages . . . the infantile universe is formed of pictures that can be recognized but that have no substantial permanence or spatial organization. During the third stage . . . a beginning of permanence is conferred upon things by prolongation of the movements of accommodation (grasping, etc.) but no systematic search for absent objects is yet observable. During the fourth stage . . . there is a searching for objects that have disappeared but no regard for their displacements. During a fifth stage . . . the object is constituted to the extent that it is permanent individual substance and inserted in groups of displacements, but the child still cannot take account of changes of position brought about outside the field of direct perception. In a sixth stage . . . there is an image of absent objects and their displacements. – Piaget, *The Construction of Reality in the Child*

Piaget (and others) disproved the innate ideas hypothesis and documented what, behaviorally, happens during the genesis of objective knowledge. What he did not accomplish was an answer to the next deeper question: *How* is what *does* happen possible? If we are not born with any "seed concepts" to get our knowledge of objects started in the first place, then what *does* seed the development? It is one thing to say a child comes to know an object by interacting with it. It is something else altogether to say what mental capacities are necessary for the possibility of this. That is the Critical question.

Piaget's remarks above contain the shadow of a clue. "It is a world in which the connections between things are masked by the relations between the action and its desired results; hence the subject's activity is conceived as being the primary and almost sole motive power," he wrote. But activity-as-motive-power and desired-results are both concepts that squarely come under the idea of the process of reflective judgment. Their real possibilities depend on nothing more than the innate sensorimotor reflexes and affective preferences human beings *are* born possessing.

The 1LAR poles of reflective Quantity are aesthetical Relation and aesthetical Modality. The first is the capacity for *value judgment*. The Critical *Realerklärung* of *value* is: the form of affective perception of a desire presented as a *sense of interest*. The second is the Modality of feeling as either a feeling of tendency (hope or hopelessness), a feeling of presentment (liking or disliking), or a feeling of accord (rightness or wrongness). The acroamatic principle of their synthesis is *continuity in Nature*. The infant seems to perceive his world as a continuous flux of sensibility where his moment-by-moment experiences flow one into the next. *The representation of objects provides a lamina that holds this flux together*. This is the *function* performed by the

synthesis of objectivity. Sense of interest focuses the act of attending, feeling-Modality provides subjective continuity in empirical consciousness. Long before a baby's rattle is for him a rattle, its sensuous perception is an intersect in sensibility providing the *dabile* (givable) of what he can *find to be common* in experiences of something shaken, something sucked, something thrown, something noisy, etc. Objects are the rivets that hold one's universe (Nature) together, and this is the Critical *practical* explanation of objectivity.

§ 6.2.2 The Synthesis of the Aesthetic Idea

The poles in the ILAR division of reflective Quality are aesthetical Quantity and aesthetical Quality. The first is a compositional form of affective perception properly called a *sense of satisfaction or dissatisfaction*. The Critical connotation for these terms is interesting because the Critical concept of satisfaction has a peculiarly non-finite "flavor" that can probably best be described as a sense of "oh, *not-bad*." Similarly, Critical dissatisfaction can be described as a sense of "oh, *not-good*." The sense is not *definitive* but, rather, *indicative*. The second pole, aesthetical Quality, is quality in the feeling of *Lust* or *Unlust* seen as a kind of interrogatory judgment (*qualis* = "what sort of?"). We use the word "quality" in its Latin connotation of "what characterizes something for judging what to hold-it-to-be" (*qualitas*). The feelings are to be regarded as affective energetics fueling the acts of the human being. The feeling of *Lust* as a feeling of pleasure, or of *Unlust* as a feeling of displeasure, are examples. Aesthetical Quality is the property of reflective judgment that makes phenomena of human esthetics possible.

The conjunctive synthesis of reflective Quality and psychic Quality (noetic *Kraft*) is called the *synthesis of the aesthetic Idea*. Its acroamatic principle is *continuity in perception*. In the prior subsection we referred to a continuous flux of sensibility. We must not take this idea for granted, or chalk it up as an unquestioned fact of experience, or reify it into something nature imposes on us¹³. If sensibility appears and feels as a continuous flux of the sensuous it is because mental processes in *judging* perception *make it so*. This is the *real function* of the aesthetic Idea. This function belongs to sense, and representing *through* this function belongs to the power of imagination. The aesthetic Idea acts as a catalyst for summoning concepts from the manifold of concepts back into the synthesis of apprehension to fuse the sense of satisfaction or dissatisfaction with aesthetical Quality in affective perception, thus servicing noetic *Kraft* in *psyche* (the power of *nous* to produce or suffer effects). The aesthetic Idea is not itself a concept but, rather, the *coalescing function* for organic unity in reflective judgment and *psyche*.

¹³ This last idea especially is a transcendent illusion. It calls for making nature *a thing that does something to us*. It is a resurrection of nature *as* Aristotle's "unmoved prime mover" or Spinoza's God or the Fates of the Stoics. This illusion is *worse* than the astrologer's "the stars impel, though they do not compel."

§ 6.2.3 The Synthesis of the Judicial Idea

The prior two subsections dealt with the subjective *reactivity* of the Organized Being. This subsection and the next deal with its subjective *proactivity*. The poles of the 1LAR division of reflective Relation are teleological Relation and teleological Modality. Teleological Relation deals with *persuasions of judgment*. Critical *persuasion* is holding-to-be-true grounded only in the particular constitution of the human being but in which this grounding is mistaken to be objective. The persuasions of judgment are judicial functions pertaining to reflective subjection (connecting a representation as a focus of attention), reflective expectation (*non-cognitive* connecting of anticipations, a judicial capacity that grounds the capacity for inferences of induction and the capacity to conceive ends), and reflective transferal (the judicial function that grounds the capacities for inference by analogy, development of mobile sensorimotor and rational action schemes, and *efficacious* causal determinations – that is, "cause regarded as a *because*"). Persuasions of judgment do not pertain to "what the human being is persuaded of" but, rather, *how* the human being is able to *persuade himself* of anything at all.

Teleological Modality deals with *preferences of judgment*. The *momenta* of this heading are the functions by which reflective judgment *presupposes*, *demands*, or *requires* particular actions aimed at the establishment of equilibrium. Presupposing judgment is exhibited in repetitious behaviors, demanding judgment in behaviors aimed at assimilation by classification, requiring judgment in accommodation behaviors that make substitution of different objects in a common action scheme possible. Preferences of judgment do not pertain to "what the human being prefers" but, rather, *how* the human being is *capable of preferring anything* over anything else. We often take for granted our ability to be persuaded or to exhibit preferences, but beneath the *ability* must lie the mental capacity for the *capability*, and this is the function of reflective Relation. It is the *functional judicial ability* to self-persuade and to self-prefer.

The conjunctive synthesis of reflective Relation and psychic Relation (somatic organization, the somatic structure of adaptation in *nous-soma* reciprocity) is the *synthesis of the judicial Idea*. Its acroamatic principle is *continuity in Self-Existenz of the human being*. Like the aesthetic Idea, the judicial Idea is not a concept. It is the functional capacity to gauge the formal expedience of sensuous conditions for a pure purpose of practical Reason; its Critical product is unity of experience in the divers acts of judgmentation and action. It underlies and grounds the possibility of motivation, the representing of motives, and of active striving to achieve a judicial state of happiness, all of which are necessary for the possibility of human intelligence (in the context that intelligence is the capacity to constitute a state of equilibrium towards which all successful sensorimotor and cognitive adaptations, and all assimilatory and accommodatory interactions

between the human being and its environment, tend). Figure 5.12 illustrates the 2LAR description of the synthesis of the judicial Idea.

Some readers might be wondering, considering all that has just been said, "What in the world does all this have to do with *somatic* organization? We are talking about all these mental functions but *soma* is the body-object in the logical mind-body division!" It is good to reflect on this rather than to be sucked under by a contextual whirlpool. First, somatic organization lies in the division of *psyche*, not *soma*. *Psyche* is the faculty of animating principles and the fundamental animating principle of somatic organization is: motivation is the accommodation of perception and motoregulatory *expression* is its assimilation. The transcendental functions of judgment, every one of them, are grounded in the practical requirement that they be functions that are *necessary for the possibility of experience*.

But Critical *experience* is the totality of knowledge of Objects, as an absolute subjective unity of the manifold of sensible representations, through *sensuous* representation. In turn, sensuous representation is possible only through the gateway of the human being's receptivity (in *psyche*) and, as figure 5.1 reminds us, sensuality takes its transcendental place in the *homo phaenomenon* aspect of being human. This is the aspect of Self-as-object-in-Nature, and it is the *physical* phenomenon of being human (*soma*) that justifies the objective validity of the merely intelligible (mathematical) concepts of the theory of judgmentation and gives them their *real context*. The real existence of a rational point of contact between our mathematical constructs and human reality, the point where mathematical reality overlaps physical reality, is conditional upon the actuality of *somatic* mechanisms of adaptation, without which the very idea of *nous-soma* reciprocity is utterly devoid of apprehensible real meaning. It is for precisely this reason that somatic organization is the *psychic context* for the synthesis of continuity in Self-*Existenz*, i.e., the synthesis of the judicial Idea. This same consideration applies also to the synthesis in continuity in Nature, i.e., the synthesis of objectivity, on the side of the adaptation dimension.

§ 6.2.4 The Synthesis of Meaning

Reflective Modality is concerned with the making of subjective implications. The poles of the 1LAR division of reflective Modality are teleological Quantity and teleological Quality. The first deals with *extensive* functions of judgments of implication: implications of local meanings, implication of a plurality of meaning contexts, and implications composing an overall structure of meanings. The latter deals with *intensive* functions of judgments of implication: implications of expedience of *Lust* in an action, implications of expedience of *Unlust* in an action, and implication of *real significance for experience*.

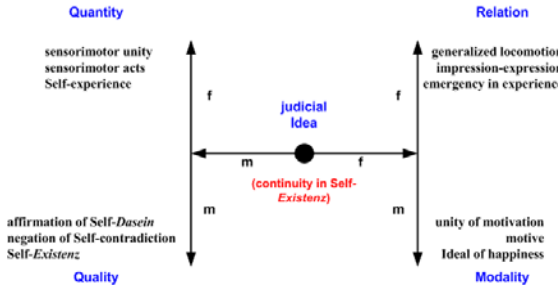


Figure 5.12: 2LAR of the judicial Idea

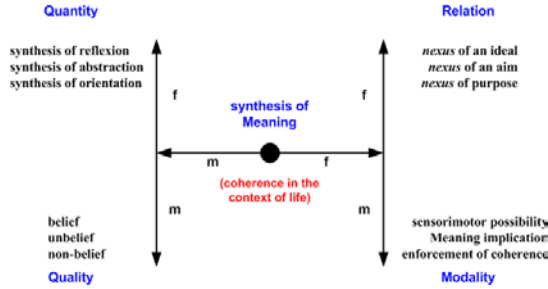


Figure 5.13 2LAR of the synthesis of Meaning

The conjunctive synthesis of reflective Modality and psychic Modality (noetic organization) is called the *synthesis of Meaning*. It was pointed out earlier that the root basis of all particular meanings is grounded in actions and all meanings are foundationally practical. Now, when one speaks of "the meaning of X" or "the meaning of Y," what is this general Idea in which X or Y are particulars? What, in other words, is the Meaning of meanings? Like individual meanings, the general Idea of Meaning must be practical because practicality is the root context of meanings. A Critical Idea (in German, *Idee*) is never a concept (a rule for the reproduction of an intuition). The objective validity of an Idea is always a practical objective validity and then *only as a regulative principle of actions*. For Meaning this regulative principle is *coherence in the overall context of life*. Figure 5.13 illustrates the 2LAR of the synthesis of Meaning.

Critical *coherence* is the necessary form of complete congruence among all Objects in the *nexus* of judgments under the principle of thorough-going determination. *Practically* a human being is *not* able to judge that such a complete congruence is actually achieved, but he *is* able to judge *lack* of coherence when congruence within the present *nexus* of judgments is violated by some event. Such an event is judged as *inexpedient* for the pure purpose of Reason's categorical imperative by the process of reflective judgment. The fundamental acroamatic law of reflective judgment is the principle of formal expedience and so a judgment of inexpedience marshals all the resources of the human being to remove the condition of inexpedience by accommodating the mental structures in the manifold of practical rules and the manifold of concepts. The synthesis of Meaning is the function for *enforcing* continuity in coherence for the *overall context* of the *experienced* life of the human being. The cycle of judgmentation closes and stabilizes when this coherence is restored by removal of inexpedience and discovery of an expedient state. The coherence of Meaning is a *sine qua non* for noetic organization.

We have here a rational factor of self-determination of rather direct importance for the idea of leadership. A number of psychologists, business managers, and military officers have long noted that most people are content to "settle" for problem solutions that "just get by" and they do not appear to exert extra effort to pursue "finding the best answer" for situations. Frederick Taylor

institutionalized this in his so-called scientific management theory. There is often a strong note of approbation found in characterizations of this sort of human behavior by those observing it. The community of management psychologists tends to take this empirical observation as a starting point and develop theories for which it is made axiomatic. Leavitt wrote,

Just what, after all, constitutes a "solution" to a problem? What is *the* best solution to the problem of college for the children? Or *the* solution to the problem of allocating our capital budget?

We used to assume, especially in economic theory, that *the* solution existed, and that people would look for it; that people would rationally select the one very best alternative from an array of all possible alternatives laid out before them.

There are two things wrong with this assumption. The first is that we do not usually have anything like a complete array of alternatives laid out before us. . . The second thing wrong is the idea that only the best solution satisfied most people most of the time. In practice, people often save themselves a great deal of time and effort by searching only until they find something that works well enough to meet their own private standards of satisfaction. In fact . . . it is precisely when people feel impelled to find the very best method, when their levels of aspiration are set (usually by others) far above their abilities, that they are likely to be inefficient problem-solvers, unable to decide and act because every available decision and action looks less than satisfactory. . .

But notice that in most cases . . . we follow what some authors have recently called a *satisficing* model. We usually indulge in a limited amount of search until we reach a *satisfactory* rather than an optimal alternative.

This model of man as a satisficing problem-solver – as an individual using both his head and his guts with a limited degree of rationality and with large elements of strategic guesswork – this is a quite different model from others that have existed in the past. . . The satisficing model is also very different from . . . a rational model of problem-solving behavior.

The rational model began as a description of how people ought to solve problems rather than how they do solve them. Somewhere along the line this distinction became blurred; researchers and even industrial problem-solvers now sometimes treat the rational model as if it were a description of the way people actually behave in problem situations. – Leavitt, *Managerial Psychology*, 6

A number of present day "continuous process improvement" programs, "program assessment" methods, and other similar rituals dotting the present day business and education landscape aim at countering this "satisficing" tendency. Their tools and methods – e.g. "rubrics," "vision and value statements," "outcomes," etc. – are designed to try to impel people, by means gentle or harsh, into behaving according to the old rational-problem-solver model. As the druids and high priests of today's management religion discover that people respond to the imposed process or system with "satisficing" methods (i.e., learn ways to "play the system"), their usual reaction is to impose more and often stricter formal restrictions and requirements aimed at trying to *automate* "helping the workforce" to become model rational-problem-solvers.

Can I state my point gently? No. These tactics just aren't going to work. Human beings are not

"satisficing problem-solvers" because of some moral flaw or defect of character. They are "satisficers" because self-determination obeys *regulative principles of expedience* in the synthesis of Meaning. *It is not possible* to judge *any action a priori* to be *the* best action according to some druidic and reified idol of objective perfection. We can judge an actual inexpedience in any particular occurrence *ex post facto*; we cannot prejudge actual expedience. The process of judgmentation doesn't work that way. Taylorized processes attempting to subdue "satisficing" are as platonically useless as telling someone, "Flap your arms and fly." A Taylorized process cannot replace a competent leader's skill. A Taylorized process isn't even a *skill* at all.

And what does it mean to be "a rational problem-solver" in the first place? It does *not* mean reasoning like an automaton. When one understands the epistemological principles at work in self-determination, it must be concluded that "to be rational" has objectively valid meaning in no other context than *the exercise of the process of judgmentation in reasoning*. This process is regulated according to the rational factors we are discussing in this chapter. We are *all* rational problem-solvers because to be a rational problem-solver is no different from being a "satisficer."

The task of the governor of a group of people is to manipulate what sorts of logico-affective situations will be judged "satisfactory" (formally expedient) by the members of the group. If he tries to do this merely by imposing Taylorized procedures what he will actually accomplish is to manipulate the followers into adopting "playing the system" as the satisficing solution. U.S. organizations today waste a lot of time and money, and lose a great deal of productive efficiency, erecting managerial totem poles and instituting druidic rites of labor sacrifice. There is no pot of gold at the end of Plato's rainbow and no road to leadership success via Neo-Taylorism.

§ 7. The Motivational Dynamic

Motivation is accommodation of perception. It is the matter of motivational state and subsists in the factors determining the accommodation of perception. These are: (1) concepts in the manifold of concepts; (2) rational rules in the manifold of rules; and (3) the energetics of affectivity in the manifold of Desires. To complete the idea of motivational state we also require a form to go with this matter and this form is called *the motivational dynamic*.

The general Critical term *dynamic* means: a representation of the *Existenz* of a *Vermögen* (potential power of organization) for a particular type of spontaneity. The term ***motivational dynamic*** means the representation of the *Existenz* of the potential power to organize and regulate the accommodation of perception. In 2LAR form the four heads of the motivational dynamic are *want* (Quantity), *drive* (Quality), *drive state* (Relation), and *type-of-motive* (Modality). Figure 5.14 illustrates the 2LAR of the motivational dynamic.

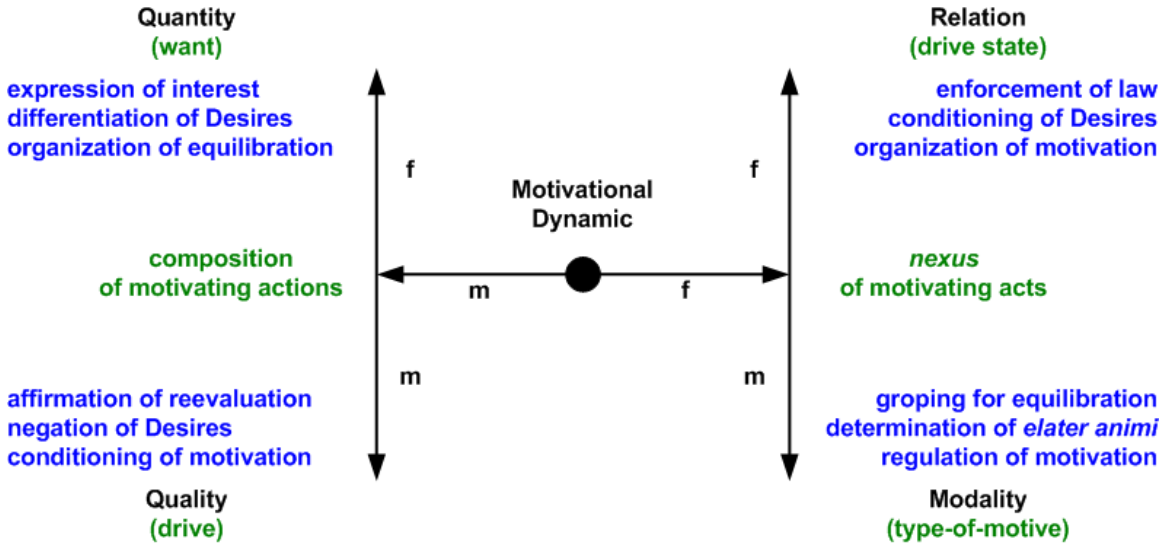


Figure 5.14: 2LAR of the motivational dynamic

§ 7.1 Critical Valuation, Validation, and Reevaluation

Before we discuss the details of the motivational dynamic we must first discuss three important ideas in the process of judgmentation: valuation; validation; and reevaluation. In Critical epistemology a value is the *form* of an affective perception of desire¹⁴ presented in an *aesthetic* Relation (sense of interest). Its corresponding *matter* term in affective perception is the feeling of *Lust* or *Unlust*. A value is referenced to *psyche* through the synthesis of objectivity. It is referenced to appetitive power in Reason by an act of *teleological* reflective judgment, namely the synthesis of desiration (in German, *Begehrung*; it is representation of a possible appetite *rule* judged to be satisfactory for formal expedience by impetuous reflective judgment).

Seen from the practical Standpoint, *the manifold of rules* in practical Reason constitutes a *value structure* the human being *constructs for himself* through acts of practical judgment and in compliance with the formula of the categorical imperative of pure Reason. The elements of this manifold are *re*-representations of values that have been transformed into appetites by previous acts of determination of appetitive power. One must note carefully that these *rules* in the manifold are *transformed* representations that turn affective representations of values into practical conditions. They are the *made-legal appetites of experience*. *Value per se* is the unity of the human being's value structure viewed as the substratum upon which all values are viewed as limitations.

That which is presented by reflective judgment and coheres with the manifold of rules is

¹⁴ The Critical *Realerklärung* of desire (*Begehren*) is: the matter of a reflective judgment consisting of a combination of affective perceptions associated through the synthesis of the aesthetic Idea. A *Desire* is the unity in affective perception by which it is possible for subjective affects to be made into the representation of an appetite. In 1LAR terms, a *Desire* is the combination of desire and desiration (*Begehrung*).

valued. That which is presented by reflective judgment and does not cohere or cannot be *immediately* assimilated into the manifold of rules is *disvalued*. From the practical Standpoint, perception is an *evaluation* and the determination of appetitive power is *valuation*. **Validation** is a determination of appetitive power permitting motoregulatory expression of all or parts of the manifold of Desires. Strictly, validation is not a positive act of Reason; the positive act is the veto of an act of motoregulatory expression and is properly called *invalidation*. **Valuation** is the practical validation of actions as being in formal compliance with the supreme condition of the categorical imperative.

Every **act of choice** is an act of validation when the immediate consequence of the act is permission of the action implicated in reflective judgment. Every act of choice in which the action implicated by reflective judgment is vetoed *initiates* an act of reevaluation. **Reevaluation** is *the act of effecting a change in perception*. It is the first act of accommodation in an adaptation cycle that concludes with a transformation in the structure of the manifold of rules. The *expression* of reevaluation is an act of speculative Reason and is called **ratio-expression**.

§ 7.2 Want

Want is representation *in concreto* of a condition for adjusting accommodation of perception through behavior grounded in psychological causality according to *a priori* practical standards. The cycle of reasoning is the act of *self-regulation by reasoning*. Conformity to practical standards is inherent in this idea. The standards for *establishing* a *causatum*, under the master regulation of the categorical imperative of practical Reason, must necessarily be *a priori* because the capacity for judgmentation is a capacity necessary for the possibility of human experience. The term "*a priori*" means "prior to experience." *A priori* knowledge is "know-how" knowledge.

These *a priori* practical standards are nothing else than standards of perfection in the context of *eliminating lack of rational perfection* discovered *a posteriori* in experience. It is not within the power of a human being to know absolute perfection but it *is* within the capacity of a human being to judge *lack* of perfection. The synthesis of perfection (*perfecting*) is judged by the three processes of judgment according to Standpoints of *practical* perfection (process of practical judgment and the manifold of rules), *logical* perfection (process of determining judgment and the manifold of concepts), and *aesthetical* perfection (process of reflective judgment and the manifold of Desires). The deeper technical details of what constitutes the *momenta* of perfection and how they are Critically understood are provided in *Principles of Mental Physics*. Inasmuch as and to the extent that each of us knows of our individual abilities to judge *lack* of perfection, we need not delve deeply into this subject to make our points in this treatise, although anyone

wishing to apply the idea should first study the Critical analysis before acting on his or her own empirically-developed idea of "what perfection is" because Critical perfection is not so obvious.

Perfection (acting to make more perfect) is a regulating principle of mind, and a scientific practitioner must learn the principle. Every human being is a *real perfectionist*, but we do not share an innate common and universal *understanding* of what *real* perfection is. Perfection is not an innate objective idea. It is an innate *a priori* standard of judgmentation. As knowledge *a priori* ("know-how knowledge") it is *cognitively unconscious* knowledge lodged deep in the functions of mind. One can think of perfection in terms of "control set-points of reasoning" in the regulation of human activities by pure practical Reason. Practical Reason's principle for the default determination of appetite can be stated, "If it is-not a lack of perfection then it is *practically* perfect *and therefore expedient*." All these remarks about perfection apply to all *momenta* in the motivational dynamic.

Want stands in a relationship to the dimension of *Lust*-Organization in the adaptive *psyche*.¹⁵ It is an integrating function for the form of composition of motivating actions (Quantity) serving the process of equilibration. This is to say *want is the organizing of equilibration*. The synthesizing functions of want are the three *momenta* depicted under want in figure 5.14.

Critical *interest* is the anticipation of a satisfaction or a dissatisfaction combined with a representation of the *Existenz* of some object of desire presented as formally expedient in reflective judgment. Critical *expression* is the capacity for a mental act to produce an action. The human being has two capacities for expression: motoregulatory expression in *psyche* and ratio-expression in *nous*. Ratio-expression is the act of reevaluation by speculative Reason. The *expression of interest* in want is expression by means of ratio-expression and the act of expression is regulated according to standards of *practical* perfection.

Experience can and does produce value structure under which representations that are *formally* expedient in reflective judgment do not necessary remain *practically* expedient when conditions are imposed by the manifold of rules. Within the impetuous manifold of Desires some connections to motoregulatory expression can therefore come into conflict with the structure of practical rules. When this happens, these connections to motoregulatory expression must be differentiated from others (those that do not conflict with the manifold of rules) so that these practically inexpedient *specific* actions can be vetoed by practical Reason. Those connections that are not vetoed are said to be *not-unsuited* to the universal practical legislation of Reason. They

¹⁵ Recall that *Lust per se* and the feeling of *Lust* or *Unlust* are not the same things. *Lust per se* is the fundamental property of the adaptive *psyche* for determining adaptation to a state of equilibrium. The feeling of *Lust* or *Unlust* is an affective perception adjudicated by reflective judgment in *nous*.

remain (for the time being) both formally and practically expedient. *Differentiation of Desires* is the synthesizing function of want for expression of a division of presentations of the manifold of Desires into two classes, namely the *unsuitable* and the *not-unsuitable*. We can call these the *permitted* and the *forbidden* classes of Desire.¹⁶

As was stated earlier, want in relationship to *Lust*-Organization in *psyche* is an idea of integration. Because the motivational dynamic serves practical Reason's imperative to produce a state of equilibrium (this is what the formula of the categorical imperative requires), the idea of integration in want is the idea of *synthesizing an integrated form of composition of specific actions serving the process of equilibration*. This *momentum* of want is called the *organization of equilibrium* and it is the practical objective for the motivational dynamic with regard to Quantity.

§ 7.3 Drive

The Critical *Realerklärung* of *drive* is: practical determination of a human being's power to be the cause of change in his external relationships. Because these external relationships include one's cognition and understanding of external objects, drive also takes in determination of a human being's power to think. This sort of power belongs to the class of powers Critical epistemology calls *moving powers*. Thus, a more succinct definition of drive is: the practical determination of a human being's moving power of action. In the context of motivation, what drive deals with is not an immediate relationship between a human being and objects in his environment because this is determined by the actions taken. Rather, drive deals with relationships between the manifold of rules, the manifold of concepts, and the manifold of Desires because these are the factors going into the *determination* of his moving power of actions.

It should be noted that the *Realerklärung* of drive differs substantially from the various usages psychology employs for this term. Reber's *Dictionary* calls drive "a term with a plethora of usages, some quite precise, others very loose." Our *Realerklärung* is fundamental in the sense that *proper* psychological usages of the idea of drive have to be deduced from it.

The motivational dynamic is the representation of a human being's capacity to regulate motivation. Because motivation (the accommodation of perception) involves the relationships between our three manifolds, motivation can be regarded as *transformation in a self-regulating law of compliance for judgmentation in general*. The primary practical Quality of drive is therefore a *conditioning function*, specifically the function of active motoregulatory expression of

¹⁶ It is not too difficult to be able to see from these considerations why the manifold of Desires is not and cannot be a structure. Structures are self-conserving but motivation (accommodation of perception) cannot be served by a self-conserving manifold of Desires. It follows that this manifold cannot be constituted as a structure. Equilibration calls for the negation of *Lust per se*, therefore the *extinguishing* of Desires.

actions. This *momentum* is called the **conditioning of motivation** in figure 5.14. This function concerns *practical interpretation* of the feeling of *Lust* or *Unlust*. Practical Reason in *nous* feels no feelings and knows no objects and so it is not with feeling *per se* that drive is concerned but, rather, with its consequences for action.

It falls to the motivational dynamic to reconcile the manifold of Desires with the conditions set by the rule structure provided in the manifold of rules. This act of reconciliation in valuation is an act having a negative character, i.e., practical Reason does not act so much to validate a Desire as it does to invalidate it. An appetite of Reason validates the Desires *allowable* under the practical rule structure. The synthesizing function of drive Quality for this character of the determination of appetite is called **negation of Desires**. Here we find an interesting parallel between this Quality of drive and Freud's idea of "repression" viewed as what he called a *ensorship function*. Freud was speaking of what he called "affect-formation," and because motivation is the accommodation of perception the negation of Desires *momentum* can be viewed as acting in this sort of role.

The formal unity of evaluation in perception is called *the value interest*. Now, Desires that are represented in the manifold of Desires by reflective judgment have *ipso facto* passed the requirement of *formal expedience* in judgment. Therefore if a Desire is vetoed by practical Reason this can only be because of some *material inexpedience*, namely, the Desire cannot be assimilated into the manifold of rules. This means the manifold of Desires contradicts the dictate of the categorical imperative of pure practical Reason and its representation is contrary to the achievement of equilibrium. Reason has only one way to deal with the disturbance this situation presents and that is by the act of reevaluation through ratio-expression acting to accommodate perception. The synthesis function of drive for this case is a *reactive* expression (i.e., it reacts to the disturbance) and is called the *momentum* of the **affirmation of reevaluation**.

§ 7.4 Drive State

Some psychologists and neuroscientists treat the ideas of drive and drive state as synonyms. A nominal equating like this has no *real* basis for psychology. Composition in the motivational dynamic deals with actions and it is to action that drive pertains. Connection in the motivational dynamic pertains to *acts* rather than actions. The distinction is a subtle one in epistemology. An act (*Handlung; actus*) is a determination of a *Kraft* as a cause of accidents whereas an action (*Wirkung; actio*) is change in appearance in accidents. Drive in the motivational dynamic pertains to the action, drive state pertains to the act. **Drive state** is the idea of Relation (form of the form of the motivational dynamic) and represents the *nexus* of reasoning in motivating acts. This is as much as to say it is *representation of formal practical context* in a human being's activities. The

three synthesizing functions (*momenta*) of drive state are notions of rule-determined choice.

The root contextual concern of drive state is the representation of the transitive Relation between perception on the noetic side of our logical division and non-autonomic action on the psychic side of this division (adaptation in *nous-soma* reciprocity). A transitive Relation represents how two otherwise diverse representations nonetheless share something in common. The synthesis function for common practical context between *nous* and *psyche* is the function for ***the organization of motivation***. Accommodation of perception (motivation) isn't merely the making of changes in perception but the *organized making* of these changes. Reason, not caprice, regulates motivation.

Desires are the seat of actions in motoregulatory expression. Practical rules represent conditions mandated by the categorical imperative. These two types of representation must be reconciled with each other in validation of actions. The manifold of rules presents practical conditions for *choice-making*. The function of reconciliation in drive state is therefore called ***the conditioning of Desires*** because where reconciliation is necessary *it is the manifold of Desires that must yield to the conditions of the practical rule structure*. Among other things, this functional notion is the mechanism grounding the human phenomenon of *acting ethically*.

The formula of the categorical imperative is absolute for self-regulation in human beings. The dictates of the categorical imperative are *categorical* ("no ifs, ands, or buts"). The reactive servicing of the categorical imperative in acts of reevaluation must therefore include a function of Relation in the motivational dynamic that is also categorical. The laws constructed by Reason are its represented manifold of rules. The categorical function of drive state is ***enforcement of law*** as the fundamental objective of the motivation dynamic with regard to Relation.

§ 7.5 Type-of-Motive

Finally we come to the matter-of-the-form of the motivational dynamic. Modality in judgment can best be regarded as *judgment of a judgment*. In object judgment Modality adds nothing at all to knowledge of an object but rather is *how a human being is self-bound by his judgment* of the concept. Does he view his concept as merely a possible understanding of the object ("maybe it is this way, but maybe it isn't"), or as an actual reality ("it is this"), or as an understanding of necessity ("this is how it *has to be*")? Determining this *connection* between the thinking Subject and the object he thinks about is what Modality does in determining (object) judgment.

Modality in connection is thus a metaphysical *nexus* rather than a physical (object) *nexus*. Modality in motivational dynamic is the *nexus of judgmentation* in motivating acts. A motive (*Bewegursache*) is *judicially* the binding determination of an act of motoregulatory expression by

an act of reflective judgment (judicial Standpoint). But *practically* (practical Standpoint) it is the cause of an *intellectual* (non-sensuous) appetite. **Type-of-motive** is the metaphysical *nexus* for determining how representations are to be synthesized to *produce* appetites in practical Reason.

In every determination there is something that functions as a *determining factor* in the making of that determination. When we say something "is the reason why" we are speaking of it *as* a determining factor. The function (*momentum*) in type-of-motive required as the mechanism for determining factors is the function for adjusting perception according to the *a priori* standards of pure practical Reason (which we spoke of earlier in this section). We call this the function of **regulation of motivation**.

Acts of reconciliation in validation are logically *assertoric*. The categorical imperative of pure practical Reason does not cajole or scold; it *commands*. Reason in *nous* is the *enforcer* of its commands in the determination of appetites through ratio-expression. That within the manifold of Desires passing the validation of practical judgment constitutes an *elater animi* ("driver of mind") in appetite. The function of assertoric Modality in the motivational dynamic is thus called **the determination of elater animi**. It *asserts a motive*.

Reason knows no objects of sense and feels no feelings of *Lust* or *Unlust*. Like the statue of Justice it is "blind" and like Dante's Minos¹⁷ it is heartless. Possessing no innate objective ideas, its act of reevaluation through ratio-expression can be only a problematic act expressed by summoning the determinable within the manifold of concepts for the purpose of accommodation of the manifold of *rules*. Reason acting through the motivational dynamic must find its own way in seeking to transform a disturbance into an equilibrium. We may say that Reason must *gripe* for a resolution to the judicial imbalance, and hence that function of Modality is called **gripping for equilibration**.

§ 8. Practical Perfection

In § 7.2 it was stated that every human being is a real perfectionist. Critical perfection is viewed from the three Standpoints as *logical* perfection, *aesthetical* perfection, and *practical* perfection. Practical perfection is the Standpoint of perfection pertaining to the motivational dynamic. Kant tells us,

From the contemplations of all perfections of knowledge we see that the principal capacities of our knowledge are properly the following: (1) *understanding*; (2) *feeling*; and (3) *appetite*.

If 1st I *make* my knowledge perfect in consideration of my *understanding*, then it is *logically perfect*. If 2nd I make my knowledge perfection in consideration of my *feeling*,

¹⁷ In *Inferno* Minos is the judge who sentences souls to the various circles of Hell according to their sins.

then it is *aesthetically perfect*.

Finally, if 3rd I make my knowledge perfect in consideration of my *appetites* then it is *practically perfect*, or likewise *moral*.

Moral perfection rests on *logical* and on *aesthetical* perfection taken together. – Kant, *Logik Blomberg*, 24: 58

The standard of practical perfection is applied to the human being's construction of the manifold of rules by practical judgment. As Kant notes, practical judgment's construction task cannot be carried out independently of the companion operations of the processes of determining and reflective judgment, the *a priori* standards for which are logical and aesthetical perfection, respectively. He means this *synthesis* when he says moral (practical) perfection "rests" on these other two "taken together."

The structure of the manifold of rules is a human being's self-constructed practical "legal code" and this structure acts as the master determiner of every non-autonomic action of a human being. It will be different and individual in every person because it is an outcome of personal experience and because its construction is fed by aliments of subjective Desires. Nonetheless, because these self-made rules *are* the rules to which a human being binds himself, the structure of the manifold of rules constitutes a *de facto* "code" that for all practical purposes must properly be called the human being's *moral code*. This brings us to an important practical *Realerklärung*, namely, ***real morality is practical perfectionism***. Piaget could hardly have been more correct when he wrote, "morality is the logic of actions."

The essentially negative character of pure practical Reason in vetoing the impetuous acts of reflective judgment – the "free won't" character of human willpower – is a naturalist explanation for the largely negative connotations that are most characteristic of formalized moral tenets as these are found in every human culture. For example, in the list of the Ten Commandments in *Exodus* there are eight "you shall not" imperatives versus only two "you shall" imperatives ("remember the sabbath day" and "honor your father and mother"). Again, Santayana wrote,

The relation between æsthetic and moral judgments, between the spheres of the beautiful and the good, is close, but the distinction between them is important. One factor of this distinction is that while æsthetic judgments are mainly positive, that is, perceptions of good, moral judgments are mainly and fundamentally negative, or perceptions of evil. Another factor of the distinction is that whereas, in the perception of beauty, our judgment is necessarily intrinsic and based on the character of the immediate experience, and never consciously on the idea of an eventual utility in the object, judgments about moral worth, on the contrary, are always based, when they are positive, upon the consciousness of benefits probably involved.

. . . The truth is that morality is not mainly concerned with the attainment of pleasure; it is rather concerned, in all its deeper and more authoritative maxims, with the prevention of suffering. There is something artificial in the deliberate pursuit of pleasure; there is something absurd in the obligation to enjoy oneself. We feel no duty in that direction; we

take to enjoyment naturally enough after the work of life is done, and the freedom and spontaneity of our pleasures is what is most essential to them.

The sad business of life is rather to escape certain dreadful evils to which our nature exposes us, – death, hunger, disease, weariness, isolation, and contempt. By the awful authority of these things, which stand like specters behind every moral injunction, conscience in reality speaks, and a mind which they have duly impressed cannot but feel, by contrast, the hopeless triviality of the search for pleasure. . . . The moment, however, that society emerges from the early pressure of the environment and is tolerably secure against primary evils, morality grows lax. The forms that life will farther assume are not to be imposed by moral authority, but are determined by the genius of the race The reign of duty gives place to the reign of freedom

Not only are the various satisfactions which morals are meant to secure æsthetic in the last analysis, but when the conscience is formed, and right principles acquire an immediate authority, our attitude to these principles becomes æsthetic also. Honor, truthfulness, and cleanliness are obvious examples. When the absence of these virtues causes an instinctive disgust . . . the reaction is essentially æsthetic, because it is not based on reflection and benevolence, but on constitutional sensitiveness. This æsthetic sensitiveness is, however, properly enough called moral, because it is the effect of conscientious training and is more powerful for good in society than laborious virtue, because it is much more constant and catching. It is *καλοκάγαθα*¹⁸, the æsthetic demand for the morally good, and perhaps the finest flower of human nature. – Santayana, *The Sense of Beauty*

As a qualitative description of the innermost real nature of outcomes of the motivational dynamic, Santayana's words can be little improved upon. Here is a factor in self-determination that is of the utmost importance for moral leadership.

Practical perfection as a standard is a standard for the *whole* of the *manifold* of rules. It can be represented in a 2LAR description in the following terms. A rule is practically perfect in

1. Quantity: when it is a practically universal law, i.e., applies without exception;
2. Quality: when it is a practical value, i.e., it is *distinctly* valuable;
3. Relation: when it is a practical imperative, i.e., a practical hypothetical imperative;
4. Modality: when it is a rule of Self-respect, i.e., when apodictic necessitation according to the rule is practically-absolute.

The *direction* set for judgmentation, in regard to practical judgment, is a direction aimed at the synthetic construction of a manifold according to an implied "structure template" of a manifold in which all lower rules could be eventually brought under *one* single supreme rule that stands as the absolutely unconditioned rule under which all practical maxims can be subsumed. No *image* of such a template exists within the practical knowledge *a priori* of the human being; rather, the nature of the *a priori* laws of the process of practical judgment can be described as practical notions for determining "this isn't it yet; try going *that* way." Such an image is an *Ideal* of Reason and is rightly called **the Ideal of the *summum bonum*** ("highest good"). The laws of practical judging are *differential* (i.e. they are "direction-setting" rather than "directions").

¹⁸ exceptional goodness and kindness in a person

This 2LAR of practical perfection in the manifold of rules is a *norm* of pure Reason. In order to compare and judge the actual manifold in relationship to this norm the human being employs what can probably best be called a *pure standard gauge* of practical Reason. In any given state of the manifold its practical hypothetical imperatives serve as norms for motivation, but since these imperatives are themselves constructed the construction process requires rules of comparison by which the manifold can be judged according to the forgoing norms. These rules are likewise representable in a 2LAR form for the practical standard gauge as follows:

1. Quantity: complete compatibility for the synthesis of the compositional form of desiration with the form of composition of the manifold of rules;
2. Quality: absolute negation of the feeling of *Lust per se*;
3. Relation: the law of the compatibility of ideas;
4. Modality (**Self-respect**): choice of the type-of-motive will be the choice for which Modality in the transcendental anticipation of desire occupies the highest grade of practical satisfaction passing the valuation of Reason according to its corresponding practical postulate of empirical thinking in general.

The law of the compatibility of ideas is: *concepts can be combined in the manifold of concepts only if the intuition of the combination is formally expedient for a purpose of pure Reason*. The grades of practical satisfaction according to the practical postulates are, from lowest to highest: (1) *those acts that cannot be validated under the conditions of the manifold of rules are impossible*; (2) *the act of reflective judgment that coheres with the conditions of the manifold of rules becomes an action*; and (3) *that practical rule whose context with the actual is determined in accordance with general conditions of valuation is necessitated*. The determination of appetitive power follows these rules of the practical standard gauge of pure Reason.

§ 9. Judgmentation

In our discussions of these rational factors in self-determination we have had to delve into the details in quite some depth. At this point it is a good idea to step back from the trees a bit and take stock of the forest. The motivational dynamic is the capacity of mind for organizing and regulating the accommodation of perception. Its functions (the *momenta* of the motivational dynamic) are pure notions of activity in the cycle of reasoning. They have specific roles. The functions of *want* are notions of conditions for the accommodation of perception. The functions of *drive* are notions of transformation in judgmentation for self-regulating *compliance* with the formula of the categorical imperative. The functions of *drive state* are notions of rule-determined choice. The functions of *type-of-motive* are notions determining how representations are to be synthesized to produce appetites.

An appetite (*Begierde*) is regarded in the practical Standpoint as a determination of a human

being's power to self-determine his actions *by making a mental representation* of something in the future as the *effect* of this self-determination. So regarded, appetite is a cause in relationship to psychological causality. From the judicial Standpoint the representation of an appetite has Desire for its matter and its determination under the manifold of rules constitutes its form. We call this determination *emotivity*. From the theoretical Standpoint an appetite is an *assimilation* of perception. An adaptation is an equilibrium between assimilation and accommodation. Accordingly, an act of self-determination in *nous* is an act of adaptation, and we are now in a position to see that the motivational dynamic synthesizes all three Standpoints depicted in figure 5.3 earlier in this chapter. In a manner of speaking, it is the engine of cognition, belief, and purpose.

The motivational dynamic belongs to the logical division of *nous* and one cannot afford to ever lose sight of the transcendental necessity for thorough-going reciprocity in representations of *nous* and *soma*. The division of *psyche* and the division of *nous* must therefore satisfy a requirement for logical continuity. The Nature of this requirement is spelled out by the synthesis in continuity through its four headings: the synthesis of objectivity; the synthesis of the aesthetic Idea; the synthesis of the judicial Idea; and the synthesis of Meaning. These speak, respectively, to continuity in Nature, in perception, in self-*Existenz*, and in coherence in the context of the life of the human being. Objects hold one's understanding of Nature together, the aesthetic Idea brings perceptions together, the judicial Idea makes one whole of experience, and Meaning holds the *system* of the phenomenon of mind together.

The theoretical factors we have considered in this chapter are practical *in essence*, as indeed is Critical epistemology overall. We have been discussing mental activities in this chapter. It is also necessary to examine the Nature of the outcomes of all these activities. These are the rational factors *of* self-determination (rather than the rational factors *in* self-determination). Throughout the discussions in this chapter, we have been brought back again and again to the supreme role of pure practical Reason as the master regulator of all non-autonomic actions of the human being. The manifold of rules is the self-generated structure of practical laws, under the master formula of the categorical imperative, to which *by necessitation* all actions of the human being are bound. The human being can *modify* this structure; he can never *violate* it.

The manifold of rules, like the manifold of concepts, is a hierarchal structure of lower rules subsumed under higher rules. The highest of these rules, the practical hypothetical imperatives, are *unconditioned* by any other rule in the manifold.¹⁹ Their *conceptualization* (as ideas in the

¹⁹ They are practically-hypothetical because they are *all* conditioned by *the* categorical imperative of pure practical Reason. Reason's categorical imperative is an *a priori* formula of equilibrium.

manifold of concepts) – when they are brought into cognizance – are conceptualized as *beliefs* having the *theoretical* character of categorical imperatives (theoretically-categorical imperatives). These are not laws of Nature. They are one's "I ought to" precepts²⁰, i.e., *ideas* with a necessitated Modality that in judgmentation form the basis for what can rightly be called an individual's self-made and experience-based *personal ethical code*. What we must examine in the next chapter is the *rational impact* of this personal and empirical ethical code on self-determination.

§ 10. References

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²⁰ One can conceptualize *many* theoretically-categorical yet practical hypothetical imperatives but there is only *one* practical categorical imperative. The latter is a pure law of human Nature.