

## Chapter 18

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# Teleological Reflective Judgment

*That man is altogether best who considers things for himself and marks what will be better afterwards and at the end.*

Hesiod

### § 1. The Manifold in Formal Expedience

The process of teleological reflective judgment is tasked with making a system of Nature. This being so, our inquiry here goes to the question: What formal properties of reflective judgment are those necessary for the possibility of constructing such a system of Nature?

From our discussions in the previous chapters, we are now in a position to see that the basic character of teleological reflective judgment is to be sought in judgments leading to *action*. We have seen that the psychological *Realerklärung* of meanings is tied fundamentally to the sensorimotor actions of the Organized Being, with all subsequent intellectual meanings, even the most abstracted, tracing their roots to the possibility of acting. In the youngest children this link is readily apparent to the psychologist-observer (as we have seen from Piaget's work); as intelligence develops this linkage becomes ever more remote as the Organized Being acquires a greater storehouse of actions, including mental actions we call the maxims of reasoning, as more concepts, ideas, and maxims of thinking are made available in the Organized Being.

We have likewise seen that even the topological synthesis of space in receptivity is a process that is bound up with the possibility of motoregulatory expression. In order to be an intuition – i.e. an objective representation of sensibility marked at a moment in time – sensibility at one moment in time must differ from that of the preceding moment in time. Obviously one possible source of differences in perception can be laid to changes having causation invested in the perceived object; however, close study of perception in human beings reveals that there is another active factor at work here, namely the perceiving Subject's own body *kinesis*. For example,

Julian Hockberg (1971) points out that, as a person looks at a scene, he or she takes in information

by a series of **fixations** – pauses of the eye that occur one to three times every second as the observer examines part of the stimulus – and **eye movements**, which propel the eye from one fixation to the next. . .

These eye movements are necessary if we are to see all the details of the scene, because a single fixation would reveal only the details near where we are looking. According to Hochberg (1970) these eye movements also have another purpose: The information they take in about different parts of the scene is used to create a “mental map” of the scene by a process of “piecing together” or “integration” [GOLD: 195-196].

The full extent to which motoregulatory expression “maps” sensations into perceptions has not been explored by psychology, nor can the particulars of this be expounded *a priori* from the theoretical Standpoint. We have seen from Piaget’s findings throughout this treatise that early objective perceptions appear to the child as an *Obs.OS*; we have seen in Damasio’s model the hypothesis (based on numerous clinical, anatomical, and physiological findings) that the generation of binding codes involves linkages and responses in the motor cortices and cerebellum; and we have seen that sensorimotor adaptation (assimilation and accommodation) is fundamental to the construction of Piagetian objects. This is enough, along with the transcendental explanation of Meaning and the topological synthesis of space, for us to conclude on both empirical and rational grounds that perception involves motoregulatory expressions.

All presentations of reflective judgments are non-cognitive presentations (because cognition is the perception of an object and affective perceptions are non-objective). The presentations of aesthetical reflective judgments are entirely subjective and these presentations do not become part of the representation of an object. Teleological reflective judgment, in contrast, *does* bind intuition, affective perception, and even the *Gestaltung* of space in the representation of a possible act.<sup>1</sup> But as teleological judgments know no objects of cognition, this possibility must be grounded in a pure *a priori* principle of judgment. Kant expressed it this way:

One must likewise admit that the teleological judgment is grounded on a principle *a priori* and would be impossible without such a principle, although in such judgments we discover the purpose of Nature solely through experience and without that we could not know that things of this sort are even possible. That is, although it combines a determined notion of a purpose, on which it grounds the possibility of certain natural products, with the representation of the Object (which does not happen in aesthetical judgment), the teleological judgment is nevertheless always only a judgment of reflection, just like the former. It does not presume at all to assert that in this objective expedience nature (or another being acting through nature) in fact proceeds *intentionally*, i.e. that in it, or its cause, the thought of a purpose determines the causality, but rather only that we must utilize the mechanical laws of nature in accordance with this analogy (relationships of causes and effects) in order to know the possibility of such Objects and to acquire an idea of them which can provide them with a context in an experience that can be systematically arranged.

A teleological judgment compares the notion of a product of nature as it is with one of what it *ought to be*. Here the judgmentation<sup>2</sup> of its possibility is grounded in a notion (of the purpose) that precedes it *a priori*. . . But to think of a product of nature that there is something that it *ought to be*

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<sup>1</sup> Recall that an *occurrence* (*eventus*) is a single *act* with its result.

<sup>2</sup> *Beurteilung*.

and then to judge<sup>3</sup> whether it really is so already presupposes a principle that could not be drawn from experience (which teaches only what things are) [KANT5c: 39-40 (20: 239-240)].

There is a lot for us to sort out in this short statement if we are to properly understand what Kant means here. The first thing we must be clear on is that every word of this quote is to be interpreted solely from the judicial Standpoint and not at all from the theoretical Standpoint. When Kant speaks of a “determined notion of a purpose,” he does not at all mean a *cognition* of a purpose.<sup>4</sup> A concept is a rule for the re-production of an intuition, and sensibility makes no such presentation of an *a priori* purpose. Recall that a *notion* has no sensible image for its representation and denotes merely a rule. Thus, a “determined notion of a purpose” can have no objectively valid meaning except that of *a particular rule laid down by teleological reflective judgment that serves a pure practical purpose of practical Reason*. There is only one pure *formal* purpose, and that is the categorical imperative of pure practical Reason. From this it follows that a determined notion of a purpose is a judicial rule serving the process of equilibration. Hence, the representation of an act by teleological reflective judgment is the *expression* of an act judged as expedient for pure Reason’s categorical imperative.

It is in this light that we understand what Kant means when he says reflective judgment compares a “product of nature as it is” with a “product of nature as it ought to be.” First of all, what is meant by the term “product of nature”? Clearly a “product” is something produced. A product of nature is therefore something “naturally produced.” Judicially, “nature” means “the *Dasein* of a thing so far as it is internally determined according to general laws” [KANT19: 231 (29: 933)]. A product of nature is therefore something “naturally existing” and, because all phenomena in Nature are understood according to the categories, the causality of a product of nature must be *thought* as physical causality. A product of nature is therefore regarded as having been “produced” according to “natural laws.” In the cognition of such an object there is no “ought to be” because the category of causality and dependency contains no “ought to.”

Yet a person is able to compare (in judgment) objects “as they are” (i.e., as they are understood) to an imaginative version of the “same” object “as it ought to be.” We do this so often and so commonly that this phenomenon at first glance is unremarkable. When I am thirsty I have no trouble at all seeing an empty glass and imagining that this glass ought to be filled with water. More imaginative power was required of that remote ancestor who first envisioned an animal skin or a cocoanut shell that “ought to be” filled with water, and thus invented the

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<sup>3</sup> *beurtheilen*.

<sup>4</sup> One difficulty in interpreting Kant is that “concept”, “idea”, and “notion” are all expressed by the same German word, *Begriff*, and the interpretation of this word depends on the context of the discussion. Most English translations of Kant render *Begriff* as “concept” regardless of the context.

forerunner of the gourd and the glass. It is this ability to take the cognition of an object as we have experienced it and compare this against an object *as we have never experienced it* that is remarkable when we consider the ground of this possibility. It is *this* capacity of mind that requires a pure notion of *reflective* (not determining) judgment (for such a notion is not found among the categories of understanding).

Recognize in this that the capacity to represent (in intuition) the actual empty glass as being filled with water is not what we mean by this *a priori* notion. Production of such an intuition is well within the power of productive imagination once the Organized Being has acquired the constituent concepts that go into imagining a water-filled glass. We mean the notion that the glass *ought to be* so filled – that somehow or in some way “things would be better” if the glass were filled. The judgment of “better” or “worse” is not a judgment of an object as such; it is rather a presentation of circumstances, possible as compared against actual, that is judged and which, through the processes of general *Beurtheilung*, can subsequently lead to both an action and to the concept of an Object as “that which is the better” (or, as the case may be, “the worse”).

This notion is none other than a notion of the *expedience* of a representation of an Object, and when this notion ties mere presentation in sensibility to an *action* of the Organized Being its rule can be called that of a purposive *nexus*. Herein is found the Critical link between the merely reflective judgment of sensibility and the power of practical Reason.

**Life** is the capacity of a being to take action in accordance with the laws of appetitive power. **Appetitive power** is its *capacity through its representations to be the cause of the actuality of the objects of these representations*. **Lust** is the *representation of the congruence of the object or the act with the subjective conditions of life*, i.e. with the capacity of the *causality of representation with respect to the actuality of its Objects* (or the determination of the power of the subject to act to produce it) [KANT4: 8fn (5: 9fn)].

The feeling of *Lust* in affective perception signals subjective expedience favoring action to make the Object of representation actual; that of *Unlust* signifies the expedience of taking action to abolish the actuality of the Object (or to prevent it from becoming actual). The feeling of *Lust* (or *Unlust*) is thereupon called a desire (in the *Begehren* sense), and its union with the expression of action (through an act of teleological reflective judgment) is desiration (*Begehrung*). The *nexus* of desire, desiration, and a possible action to be taken constitutes a *manifold of Desires* which stands to the appetitive power of practical Reason as an Object of choice. **The manifold in formal expedience, i.e. the *nexus* of reflective judgment, is the manifold of Desires.**

## § 2. The Hypothetical Perspective in the Judicial Standpoint

The foregoing consideration immediately leads to the question: How can a mere manifold of

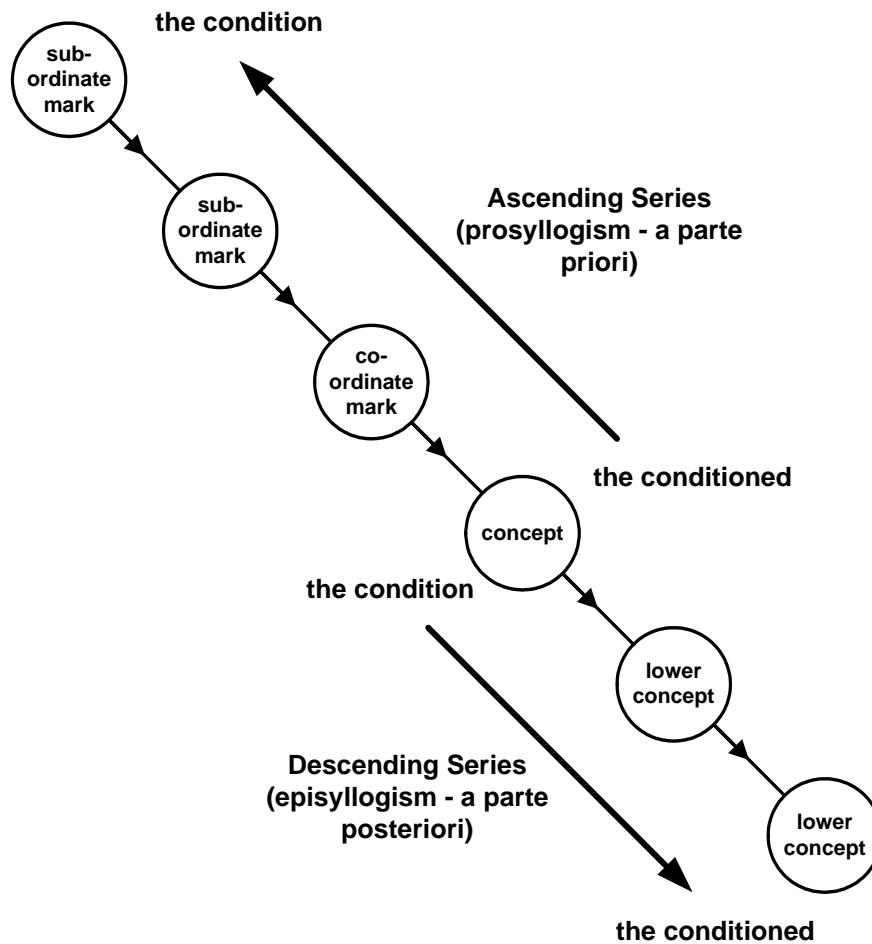
Desires make possible the capability for realizing teleological reflective judgment's task of making a system of Nature? To answer this question we must explore Rational Cosmology from the judicial Standpoint.

When we introduced the system of cosmological Ideas in Chapter 4 and applied them in Chapter 9, we did so from the theoretical Standpoint. The hypothetical reflective perspective in the theoretical Standpoint is the metaphysic for organization of Nature (the "world model") in thinking. We saw that from this Standpoint the Ideas are merely regulative principles providing a schematism in the reasoning process, but in making our exposition of these Ideas our descriptions were in terms of end results (goals of Reason) couched in Object terms. When we take up these Ideas in the judicial Standpoint our view must shift from the net outcome of these regulations (for thinking) to how these Ideas are reflected in acts of reflective judgment under the principle of formal expedience. The general cosmological Idea is the Idea of absolute completion in the series of conditions, and so here we must ask: What is the absolute condition of absolute completion in a series of conditions and how is it possible for this condition to be judged *a priori*?

The four cosmological Ideas share in common a *judicial* notion of *absolute completeness*. We saw in Chapter 9 that Kant uses the word "absolute" to denote "unrestricted validity" – i.e. validity that holds in every respect; "absolute completeness" thus implies "complete in every respect and without any limitation acting as a condition of completeness." Now, we know that such absolute completeness can never be guaranteed for contingent empirical phenomena, and so we must acknowledge the immediate implication of this. This implication is none other than that the notion of absolute completeness is without objective validity when this notion is invested in an object of appearances regarded as a thing-in-itself. In other words, absolute completeness cannot be apodictic *in* experience. Rather, as we are about to see, absolute completeness is a notion necessary for the possibility of reasoning. Therefore the objective validity of this notion cannot be other than a practical objective validity. This notion, therefore, can call upon no objectively sufficient ground, and, hence, its judgment can be based on nothing other than a subjectively sufficient ground for general *Beurtheilung*.

But what in judgmentation can be regarded as having the character of absolute unity in a series of conditions (hence absolute completeness under the four titles of Quantity, Quality, Relation, and Modality)? Put another way, what kind of judgment is entitled to be called *unconditional*? We already know the answer to this (from Chapter 16); it is **a judgment of belief**. A belief is unconditional *because it is undoubted and unquestioned holding-to-be-true-and-binding at the moment the judgment is rendered*. All acts of *determining* judgment subsume particulars under a *given* general concept, but neither determining judgment nor imagination can

give this general concept to themselves for their own use. That task falls to reflective judgment through inferences of ideation, induction, or analogy. The structure of the manifold of concepts takes the form of multiple series of combinations, each descending from a concept constituting a condition (in the origin of the series) downward to each concept of a conditioned appearance (when the manifold is viewed *a parte posteriori*). Figure 18.2.1 provides an illustration of this structure. For any particular concept at any one moment in time, the series of combinations for that concept is finite in both the *a parte priori* and *a parte posteriori* directions (because we



**Figure 18.2.1:** The series combination of concepts in the manifold of concepts. For simplicity the figure omits illustration of multiple subordinate and coordinate combinations. The circle labeled "concept" is the reference concept in the structure illustrated. The concept can have multiple coordinate marks, and can have multiple subordinate marks. The concept acts as a (conditioned) condition *a parte posteriori* and as a conditioned *a parte priori*. The highest concept *a parte priori* for the concept is, for that concept, an unconditioned condition.

cannot with objective validity regard anything in the manifold of concepts as *actually* extended to mathematical infinity in Cantor’s sense of mathematical “grades of infinities”). At every moment in time the manifold of concepts therefore contains some concepts that stand atop the series, and although every such concept may eventually come to have coordinate characteristics that act as *its* conditions, at the moment in time currently being considered every such highest concept is itself **practically unconditioned**, which means nothing more than that these concepts constitute *the conceptual beliefs of the moment*. Because all such concepts of belief contain in their spheres all concepts connected under them *a parte posteriori*, the union of all conceptual beliefs of the moment and their spheres constitutes the momentary whole of the manifold of concepts.

From this consideration we can now see how the cosmological Ideas are to be viewed in the judicial Standpoint. They are **the regulations of belief** under the principle of formal expedience of Nature. Under these regulations, the *momenta* of teleological reflective judgment are the judicial **functions of belief**, which is to say that these *momenta* are the judicial notions necessary for the possibility of *systematic* experience.

## § 2.1 The Judicial Cosmological Idea of Modality

We begin our exposition of the hypothetical reflective perspective in the judicial Standpoint with the Ideas of *nexus* in the manifold of Desires. This *nexus* falls under the regulation of the dynamical-cosmological Ideas, which we earlier said (Chapter 9 §4.2) pertain to intelligible conditions required for the satisfaction of Reason. (This is in contrast to the mathematical-cosmological Ideas, which involve intuition – hence are “mathematical” – and therefore pertain to sensible conditions of perception). In our previous discussions of the cosmological Ideas (Chapters 4 and 9) the treatment of the dynamical-cosmological Ideas was significantly more brief than was the discussion of the mathematical-cosmological Ideas. This was because those discussions took place in the context of the theoretical Standpoint of the Critical Philosophy, but the “home base” of the dynamical-cosmological Ideas – which drive the *systematic* context and coherence of Nature – properly belongs to the judicial Standpoint.

The exposition here first takes up the cosmological Idea of Modality. This is because if we are going to discuss *nexus* it makes sense to first take up the matter of *nexus* before tackling its form. By way of quick review, the fourth cosmological Idea is the Idea of absolute completeness as regards the dependence of the *Dasein* of what is changeable in appearance. Now, from the theoretical Standpoint the practical objective validity of the idea of absolute completeness is found to subsist in the idea of a process of regressive synthesis (prosyllogism in Figure 18.2.1). In the judicial Standpoint the explanation of the fourth cosmological Idea thus centers around formal

expedience with regard to the possibility of *grounds for belief* in the existence (in the *Dasein* sense) of higher conditions in the Nature of changeable appearances, hence to the possibility of regressive synthesis in understanding. The objective validity of such an explanation can only be practical, but note that the direction of Reason in this prosyllogism bespeaks of spontaneity of response in the Organized Being because the process of abstraction *takes from* the previously recognized in sensibility, and is thus an act of patiency in the Organized Being<sup>5</sup>.

From the judicial Standpoint the Idea of absolute completeness regarding the *Dasein* of the changeable in appearance is regarded not as an objective end but, rather, as a subjective purpose, subsisting in the acts of the Organized Being, to be attained through these acts. Teleological reflective judgments are subjective judgments of belief, and the Idea speaks to the Modality of such beliefs as they appear within the process of judgmentation in general. Speaking from this wider view of general *Beurtheilung*, Kant described three *modi* of such beliefs, which he named *pragmatic*, *doctrinal*, and *moral* beliefs.

It can be only in a *practical respect* that theoretically insufficient holding-to-be-true be called belief. This practical aim is either that of *skill* or of *morality*, the former for arbitrary and contingent purposes, the latter, however, for absolutely necessary purposes.

When once a purpose is proposed, then the conditions for attainment are hypothetically necessary. This necessity is subjectively but still only comparatively sufficient if I do not know of any other conditions at all under which the purpose could be attained; but it is sufficient absolutely and for everyone if I know with certainty that no one else can know of any other conditions that lead to the proposed end. In the first case my presupposition and holding-to-be-true of certain conditions is merely contingent belief, in the second case, however, it is a necessary belief. . . I call such contingent beliefs, which, however, ground the actual employment of the means to certain acts, *pragmatic beliefs*. . . Thus pragmatic belief has only a degree, which can be large or small according to the difference of the interest that is at stake [KANT1a: 686-687 (B: 851-853)].

The *modus* of pragmatic belief is tied to the idea of the “skill” of the Organized Being in attaining to an end that suits the purpose. In terms of the Modality of a logical function of judgment, this *modus* is that of the problematic. The belief does not guarantee the certainty of achievement. But note that this does not imply uncertainty in the *ground of the act*; Kant qualified the subjective sufficiency of the belief by saying, “if I do not know of any other condition at all under which the purpose could be attained.” If the attainment of the purpose is *not* achieved through the act, it will come as a surprise to the Organized Being. Contingency here is with regard to the outcome, not with regard to the holding-to-be-true and holding-to-be-binding of the judgment.

We could say of pragmatic belief that the Organized Being “doesn’t give the matter much

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<sup>5</sup> Recall from Chapter 14 (§3.1) that we defined patiency as self-regulation in an Organized Being, i.e. its agency in acts serving the *a priori* purpose of equilibration, a service that need only be rendered when the Organized Being, as patient, is affected such that a disturbance in equilibrium has been effected. The patiency of an Organized Being is the synthesis of its characteristic of being an agent with that of its being a patient.



thought,” because the conditions of attainment of the purpose face no competition in judgment from other possible conditions for its achievement.<sup>6</sup> The situation is different for beliefs formed through a more thorough process of reasoning that contains a factor of decision-making.

Yet in many cases we can still grasp in thinking and imagine an undertaking for which we would suppose ourselves to have sufficient grounds if it gave a means to come to certainty about the affair, even though we perhaps can undertake nothing in regard to an Object, and holding-to-be-true is therefore merely theoretical; thus it gives in merely theoretical judgments an *analog* of practical judgments where the word “belief” suits that holding-to-be-true, and which we can call *doctrinal beliefs*. . .

The expression of belief is in such cases an expression of modesty from an *objective* view, but at the same time of the firmness of confidence in a *subjective* view. . . The word “belief,” however, goes only to the guidance of reason that an Idea gives me and the subjective influence on the dispatch of my acts of reason that holds me fast to it, even though I am not in a position to give an account of it from a speculative view.

But there is something unsteady about merely doctrinal belief; one is often put off from it by difficulties that come up in speculation, although, to be sure, one inexorably returns to it again [KANT1a: 687-688 (B: 853-856)].

Doctrinal beliefs underlie what we might call one’s “world views” of things, i.e. “what I expect should be so.” Inferences of induction are of this flavor of Modality, as are the most fundamental tenets of religious theology in the works of men such as Anselm, Augustine, and Thomas Aquinas. Belief in the æther in pre-twentieth century physics provides another example. Belief in the “virtual photons” in modern-day quantum electrodynamics provides another example of a doctrinal belief (since by definition virtual photons *per se* are unobservable). But a doctrinal belief need not march so far toward the borders of transcendent speculation; it is enough for the act of a judgment formed through habits to go unchallenged. For example, the acts of teleological judgment that go into such a simple activity as *walking* have this same flavor, as anyone who has ever slipped and fallen on an icy street might appreciate. Doctrinal beliefs are *learned* beliefs, and while they may be hard to shake off, it is possible for them to be shaken.<sup>7</sup> The flavor of a doctrinal belief in terms of the logical Modality of judgment is assertoric.

Finally we come to what is for many people the most controversial *modus* of belief in Kant’s theory.

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<sup>6</sup> In this same passage in *Critique of Pure Reason* Kant gives a rather weak example, namely that of a doctor diagnosing a patient as suffering from consumption. It is a poor example because it lies at best on the borderline between belief and opinion, and it contains a passing comment that in my opinion actually places it on the wrong side of this border.

<sup>7</sup> In higher mathematics there is a doctrine known as “abstract algebra” where the idea of “numbers” is far more abstract and takes on a far more general scope of usage than most people are familiar with. Many years ago I was working on an engineering project in partnership with a younger colleague who was unfamiliar with it. I was proposing to use techniques of abstract algebra to accomplish our task. My younger colleague’s reaction to my proposal could best be described as “shock.” After listening for a short time to what I was proposing, he blurted out, “You can’t do that! *You’re messing with the number system!*”

It is entirely otherwise in the case of *moral belief*. For there it is absolutely necessary that something must happen, namely that I fulfill the moral law in all points. The purpose here is inescapably fixed, and according to all my insight there is only a single condition under which this purpose coheres with all ends together and thereby has practical validity . . .

The only reservation that is to be found here is that this rational belief is grounded on the presupposition of moral dispositions [KANT1a: 688-689 (B: 856-857)].

The only reservation indeed. Kant regarded “the moral law within me” as the practical and experiential manifestation of the categorical imperative in its purest form, and it often seems in his works as if he equated the two. I commented in Chapter 13 that Kant admixed his applied metaphysic of morals and his discussions of the categorical imperative, and he has done so here in this passage from *Critique of Pure Reason*. In view of the material discussed in Chapter 13, we need to more deeply examine this *modus* that Kant calls moral belief.

We have seen previously that all moral maxims applicable in sensible Nature are learned. However, we have also seen empirical evidence, in the observable character of the development of moral realism in the child, that requires as a ground for its possibility some inner compulsion that is practically exhibited in behaviors that can only be described as “acting to do the right thing” (howsoever the particular individual views “what is right” in any given circumstance). When an individual examines his own reasons and finds that his justification for taking a particular action can be laid to no other ground than because he judges it is the right thing to do and it would be wrong if he were to do otherwise, his judgment is of the type that Kant names a moral belief. One often says of such an action, “I really had no other choice.”

The practical categorical imperative, as the *law* of equilibration, dictates as a necessity acting to perfect the best state of equilibrium the Organized Being knows how to achieve in any particular circumstance. It cannot be regarded as being limited to purely and only “moral” actions if it is to be held up as the supreme law of practical Reason. Put another way, *all three types* of belief Modalities named above fall under the formula of the categorical imperative. But when the judgment of belief (as ground of an action) presents through Desire an act grounded as a hypothetical imperative (under a wholly rational belief that takes no regard for sensuous receptivity and bases the anticipated state of equilibrium solely on an idea of what is the greater good to be done, compared to which any other possible action is regarded by the Organized Being as a relative evil) then the belief involved can rightly be called a moral belief. But here we must recognize that, while acting under the categorical imperative is always necessary, the hypothetical imperative of the act is *made necessary*, i.e. necessitated, by nothing else than the Organized Being himself. I might take some action which I regard as morally necessary that you regard as not only not morally necessary but perhaps even foolish or maybe even immoral. For example, in an earlier time participating in a pistol duel to “settle matters of honor” was regarded by the

“gentle men” of that age as a moral imperative. Not many of us today view things in this way, and modern society calls this same action “murder.”

All rationally-formulated *ideas* of laws of conduct are hypothetical imperatives in the practical Standpoint. In speculative understanding the concept of such an idea carries the Modality of the category of necessity, and if this concept also carries the categorical *momentum* in the form of its logical function of judgment in Relation then the Organized Being *understands* this hypothetical imperative **as a speculatively categorical imperative from the theoretical Standpoint**. This is a distinction we need to appreciate in our theory because it marks the difference between the practical Standpoint (in which the standing of the idea is merely that of a hypothetical imperative of practical Reason) and the theoretical Standpoint (in which the idea is *made into* an exhibition of how the Organized Being understands a particular idea as a “moral law” of speculative Reason). When Kant admixes his applied metaphysic of morals with discussions of the metaphysics proper of the Critical Philosophy, he blurs this distinction and places us all in a position where misunderstandings are highly likely to occur.

Kant makes such an admixture in the quote above. *His* “single condition” that “all *his* insight” *understands* as that-under-which “this purpose coheres with all other ends” is “God and a future world.” What we need to understand here is that Kant is not claiming moral beliefs in any objectively valid way from the theoretical Standpoint *prove* the existence of supernatural God or an afterlife. Indeed, Kant tells us in numerous places that no such proof can be obtained from the speculative use of Reason. Later in the same passage of *Critique of Pure Reason* he tells us, “I must not even say ‘*It is* morally certain that there is a God,’ etc., but rather ‘*I am* morally certain’ etc.” Kant’s personal “moral certainty” in this matter is a product of his theory of morals, not his metaphysics proper of the Critical Philosophy. The existence of God and an afterlife in Kantian moral theory is rather alike in theoretical character to Aristotle’s “unmoved prime mover” in the sense that Kant sees the idea of God as the ideal of a teleological end providing a rational justification for a human being’s willful adherence to “the moral law.” In the dialectic of *Critique of Practical Reason* he says of the “practical idea of God”:

Consequently the postulate of the *highest derived good* (the best world) is at the same time the postulate of the actuality of a *highest original good*, namely the *Existenz* of God. Now it was a duty for us to promote the highest good, hence there is in us not merely the warrant but also the necessity, as a need combined with duty, to presuppose the possibility of this highest good, which, since it is possible only under the condition of the *Dasein* of God, combines the same inseparably with duty, that is, it is morally necessary to assume the *Dasein* of God.

It is well to mark here that this moral necessity *is subjective*, that is, a need, and not *objective*, that is, itself a duty, for there cannot at all be a duty to assume the *Existenz* of anything (since this concerns only the theoretical use of reason). Moreover, it is not to be understood by this that it is necessary to assume the *Dasein* of God *as a ground of all obligation in general* (for this rests, as has

been sufficiently shown, solely on the autonomy of reason itself). What belongs to duty here is only the striving to produce and promote the highest good in the world, the possibility of which can therefore be postulated, while our reason finds this thinkable only on the presupposition of a supreme intelligence; to assume the *Dasein* of this supreme intelligence is thus combined with the consciousness of our duty, although this assumption itself belongs to theoretical reason; with respect to that alone, as a ground of explanation, it can be called an *hypothesis*; but in regard to the intelligibility of an Object given us by the moral law (the highest good), and consequently of a need for practical ends, it can be called *faith* and, indeed, a pure *rational faith* since pure reason alone (in its theoretical as well as in its practical use) is the source from which it springs [KANT4: 105 (5: 125-126)].

“God” is here the Object of a *theoretical* idea of an intelligible reason to suppose there is truly such a thing as “the highest good” that we *ought to* strive to produce and promote. In more common terms, God is, in a manner of speaking, the ground for explanations of why we ought to do our duty even when the performance of our duty does not bring us tangible benefits and might even bring us harm. As Kant put it in the *Opus Postumum*,

There is a God, not as a world-soul in nature but rather as a personal principle of human reason (*ens summum, summa intelligentia, summum bonum*)<sup>8</sup> which, as the Idea of a holy being, combines complete freedom with the law of duty in the categorical imperative of duty [KANT10: 225 (21:19)].

This is the idea of God considered from the judicial Standpoint as drawing its practical objective validity from the Organized Being’s capacity for making and acting upon purely rational free principles that ignore merely sensuous self-interests and personal gains in favor of an ideal constructed in one’s personal reasoning. *This* idea of God, described in terms of “highest ideals” of being, understanding, and goodness, is the idea of a supersensible, but not a supernatural, Object. Kant, in his Critical view of religion, regarded acting out of fear of God as having no moral value because then the basis of the action is a merely selfish interest (fear of punishment; hope for reward). Rather, one should act out of *respect for* God. One can replace the word “God” in Kant’s moral theory with “the highest Ideal of behavior” and lose only the poetry.

The most honest, ethical, virtuous man it is my privilege to know is as convinced there is no supernatural God as Augustine was that there is. My friend appears to have no need whatever for any reason to *justify* being a good man. He appears to be a good man just for the sake of being a good man. This makes him the best living example I know of a man who has what Kant called “a good will.” He is not a philosopher and does not trouble himself with trying to answer “what is the ‘good’ of good?” (as moral philosophers must do). In my opinion, that such a man walks the earth is stronger evidence in favor of the Critical Philosophy’s metaphysics proper of practical Reason than all of Kant’s applied moral philosophy, which aims to understand a rational basis for ethics and to ground what Palmquist calls “Kant’s Critical Religion.” And no heaven that I can

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<sup>8</sup> highest being, highest understanding, highest good

imagine would refuse to admit my friend.

Now, what we know about the existence of an object of appearance is merely what we understand of the appearances of its *Existenz* and of the ideas that unify these appearances. There is plurality in the object's *Existenz*, but in its *Dasein* there is only unity. There is succession in appearances of *Existenz*, but *Dasein* is persistent in subjective time. *Existenz* is the manner of understanding Objects, but *Dasein-Nichtsein* is a category of understanding (second category of Modality, actuality & non-being). The fourth cosmological Idea is the Idea of absolute completeness with regard to the dependence of the *Dasein* of the changeable in appearance, not with regard to the *Existenz*. What are we to understand of this Idea from the judicial Standpoint?

To inquire into what the fourth Idea means is in effect to ask: How can or does the *Dasein* of an *Object* depend on merely subjective *purposes* of the Organized Being who thinks this *Dasein*? and what brings *absolute completeness* to this dependency? Here let us first remind ourselves of what is stated by Kant's Copernican hypothesis: objects conform to our knowledge and not the other way around. An object *is* an object *to me* because *I think it is an object*. The absolute point of reference of an object for every Organized Being is that Organized Being's *I* of transcendental apperception, the one *noumenon* for which, in every Organized Being, *Dasein* holds as certain.

Some scholars object that this state of affairs somehow takes away from the reality of objects and leads to a position of subjective idealism. However, there is a *saltus* in this objection because it confuses *object* and *thing*; it contains implicit presuppositions that ontology takes precedence over epistemology and that human beings are somehow endowed with a copy-of-reality mechanism. In deed these presuppositions cannot be separated; doing so leads at best to Hume's skepticism. Let us be reminded that a *thing-in-itself* is an object regarded as having a *Dasein* standing independently of the Organized Being who knows the object.<sup>9</sup> This independence leads to a number of problems well known to philosophers. Radically different metaphysical positions, e.g. Berkeley, Hume, Leibniz, Spinoza, etc., have resulted from different non-Copernican ways of grappling with these issues. But, in common consensus, whether implicit or explicit, *that which is objective in a thing is what can be communicated of the concepts of that thing and found agreeable by all*, i.e. what all sufficiently informed rational beings consent to hold-to-be-true of an object.

Holding-to-be-true is an occurrence in our understanding that may rest on objective grounds, but that also requires subjective causes in the mind of he who judges. If it is valid for everyone merely as long as he has reason, then its ground is objectively sufficient, and in that case holding-to-be-true is called *conviction*. If it has its ground only in the particular constitution of the subject then it is

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<sup>9</sup> From the judicial Standpoint an object is a thing-as-we-know-it. A *Ding an sich selbst* is a thing-as-we-cannot-know-it. These constitute a *contrary* pair (not contradictory). A *noumenon* is their common point.

called *persuasion*.

Persuasion is mere semblance because the ground of the judgment, which lies solely in the subject, is held to be objective. Hence such a judgment also has only private validity, and this holding-to-be-true cannot be communicated. Truth, however, rests upon congruence with the Object, with regard to which, consequently, the judgments of every understanding must agree . . . The touchstone of whether holding-to-be-true is conviction or mere persuasion is therefore, externally, the possibility of communicating it and finding the holding-to-be-true to be valid for the reason of every human being; for in that case there is at least a presumption that the ground of the agreement of all judgments, regardless of the difference among the subjects, rests on the common ground, namely the Object, with which they therefore all agree and through which the truth of the judgment is proved.

Accordingly, persuasion cannot be distinguished from conviction subjectively, when the subject has holding-to-be-true merely as an appearance of his own mind; but the experiment one makes on the understanding of others, to see if the grounds that are valid for us have the same effect on the reason of others, is a means, although only a subjective means, not for producing conviction, to be sure, but yet for revealing the merely private validity of the judgment, i.e. something in it that is mere persuasion [KANT1a: 684-685 (B: 848-849)].

When we stick to the Copernican hypothesis, before we can speak at all of any object the *Dasein* of that object must first be posited in determining judgment. In speculative Reason such a judgment must logically be preceded by a determinant judgment of causality and dependency, and then the *Dasein* of a new object can be concluded on the ground that the object is the cause (according to the ontological principles of the categories that we have already presented). But even here the Organized Being must first “have a reason” to posit a cause, i.e. “something that causes it to think there is a cause.” Determining judgment does not do this for itself because its employment is regulated by pure Reason. Sensibility does not do this either because sensibility is not a judgment. *And Reason would only do this if doing so served the categorical imperative.* That which serves the categorical imperative is *expedient* for it, and so we conclude that *it is an act of reflective judgment upon which the Dasein of an Object depends.* But such a judgment is itself non-cognitive, is “forward-looking,” and hence is *purposive*. This is how and why the *Dasein* of an Object has its dependency on subjective purpose and through the process of teleological reflective judgment. The cognition of the *Dasein* of an Object is thus grounded in belief, and belief is *absolutely grounded* in the transcendental *I* of the thinking Subject. Old Protagoras was right: *Man is the measure of all things.*

To summarize: Regarded from the judicial Standpoint, the fourth cosmological Idea pertains to the Modality of a *practical* purpose that underlies the manner of expedience in which a belief is held-to-be-true in consciousness. Now, the idea of “purpose” is inherently teleological, and as such speaks to conditions *as grounds* for a prosyllogism of general *Beurtheilung* (judgmentation) *from* the presentation of an act of reflective judgment. In relationship to the judicial Idea of continuity in Nature, the connection of Desire with the appetitive power of pure practical Reason stands as the determining factor in the condition for any holding-to-be-binding of an act of orientation in the determination of the activity of the Organized Being. So far as the *Dasein* of

spontaneous actions of the Organized Being are concerned, the *Existenz* of any form of action absolutely owes its *Dasein* to the transcendental Subject regarded as *noumenon*, the actions of which belong to its accidents of appearance in sensible Nature. From the judicial Standpoint **the I of transcendental apperception is the unconditioned condition for thinking the *Dasein* of any object**. Belief thereby presents a causality of purpose. Pragmatic belief is a rule of Desire; doctrinal belief is a maxim of Desire; and moral belief is an imperative of Desire.

## § 2.2 The Judicial Cosmological Idea of Relation

The third cosmological Idea from the theoretical Standpoint is the Idea of absolute completeness in the origin (beginning) of an appearance generally. The theory of representation in sensibility and the pure intuitions of space and time speak to the “production mechanics” of representations of appearances, but neither sensibility nor pure intuition speak directly to the *origin of appearances*. By this I mean: these do not address the conditions by which affect through receptivity leads to the presentation of a *this* in appearance rather than some other *that* in appearance, or, for that matter, to presentation *as* appearance at all. For example, I think it is safe for me to presume that for you as well as for me the top of the Washington Monument is the pointy end and that neither of us think the Washington Monument is the mast of a sailboat. But *for what reason* is it possible for us to agree on this if we reject the copy-of-reality hypothesis?

Critics of William James’ American Pragmatism are fond of attacking his philosophy more or less on the basis of the *materia circa quam* of this question. Let us take an expanded look at one such criticism, delivered by Joad and briefly cited in Chapter 7, that touches upon some of the same issues we face here.

But if experience is really an indeterminate flux or blur, as void of distinction, say, as a sheet of paper, it may be asked why the mind should carve out of it certain objects rather than others. Why, for example, should my mind carve out a chair instead of a rhinoceros as the object upon which I am now sitting, unless there is some distinctive mark or feature in reality itself in virtue of which I do in fact say “chair” and not “rhinoceros”? Is it not, then, necessary to assume, as most philosophers have assumed, that reality is not wholly featureless, not wholly without differentiation, but contains within itself certain rudimentary distinctions which form the basis upon which mind builds the structure of the world known to science and to common sense? Whichever view of the matter we take, however, Pragmatism finds itself in a dilemma. Let us consider the two alternatives separately [JOAD: 457-458].

We will get to the details of Joad’s criticism momentarily, but first let us point out some Platonic presuppositions at the front of his argument. Is “experience” to be regarded as a “flux or blur”? Our answer is clearly “no.” Experience, according to the Critical Philosophy, has for its first and foremost character *the structure of a system*. A “blur” – much less a “flux” – is not a system. Second, the *phenomenon* of mind does not “carve out of experience”; it *makes* experience, and it

does so according to *a priori* rules. This is indeed a primary characteristic of the phenomenon we call “mind.” Third, “reality” is not a thing-in-itself – not a *Ding an sich* – possessing either essential features or essential featurelessness. All-of-Reality (“Reality”) is the Idea of a necessary substratum with reference to which we say the reality of an object is a limitation. We might say “Reality” is to “the real” what space is to the appearance.<sup>10</sup> ‘To be a real something’ means I have a concept of an object connected with other concepts that provide it with a *coherent context* in Nature, and that somewhere in this connection in the manifold of concepts there is at least one concept understood by the category of reality, i.e. its intuition contained the *materia* of sensation.

Joad’s criticism continues thus:

1. If, on the one hand, it is true that mind can arbitrarily carve out of the flow of experience whatsoever it pleases without let or hindrance from reality, if, in short, mind can, as the pragmatists hold, make its own facts, how is it possible for facts so made to thwart the purposes of the maker?

Pragmatism . . . regards scientific laws as postulates which are progressively verified or invalidated by their success or failure in conforming with the facts. But, if we select our own facts, in what sense is it possible for them not to verify the postulates we have formed? Pragmatism, which holds that some postulates work and become true, while others fail to work and are therefore abandoned, obviously envisages the possibility of facts sometimes conforming to a hypothesis and sometimes failing to do so: yet it is equally obvious that the psychology of fact-making upon which Pragmatism is based rules this possibility out of court.

It is difficult to see, therefore, how on pragmatist premises any postulate or truth claim, as it is called, can fail to make good, seeing that, whatever the consequences its adoption involves, the postulate, being arbitrarily selected from the flow of reality to suit our purposes, must necessarily have the effect of serving those purposes. But, if this is the case, the Pragmatic theory of truth is convicted of the very defect which it imputes to its rivals, the defect, namely, of failing to provide a criterion by which true beliefs are to be distinguished from false beliefs [JOAD: 458].

We will not re-assault the Platonic presumptions, already dealt with, that reappear in the argument above other than to quietly note that the ability “to let or hinder” is not a characteristic of Critical Reality. Let us first take on this issue of the phenomenon of mind “making its own facts.” The Critical Philosophy does indeed take the position that objects-regarded-as-facts are the products of thinking and general *Beurtheilung*. How indeed can “facts so made thwart the purposes of the maker”? This question is easily addressed.

First, there is only one pure practical purpose of Reason, and this is the equilibrium mandated by the categorical imperative. The judgment of expedience-in-sensibility is a non-cognitive judgment, and so it is a judgment standing only in a mediate, and not in immediate, Relation to objects of appearance. Reflective judgments are judgments of *formal*, not material, expedience for Nature, and have two principal facets. *Logical* formal expedience is judged as belief, and this is the pathway for reflective judgment to motivate speculative reasoning in the employment of the process of determining judgment. *Subjective* formal expedience is the

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<sup>10</sup> In the *I* one has knowledge of *Dasein* without *Existenz*, in Reality of *Existenz* without *Dasein*.



aesthetical reflective judgment of the feeling of *Lust* and *Unlust*, and in relationship to this judgment the pure purpose of *practical* Reason is to negate *Lust per se* altogether. Pure Reason does not care if previous ideas and concepts do not remain fixed and immutable, and teleological reflective judgment cares only that experience of Nature be constituted *as a system* and such that the equilibrium of this system serves the categorical imperative (and this is what “expedience in Nature” means). Judgments of belief do not present as objects but as unquestioned holding-to-be-true-and-binding in the presentation of teleological reflective judgment. Judgments of the feeling of *Lust* or *Unlust* likewise do not present as objects, and such judgments *question beliefs*. Combination in reflective judgment is an interplay between aesthetical and teleological presentation and *all that matters in the end is the harmonious equilibration of composition* (in aesthetical judgment) *and connection* (in teleological judgment of the *nexus* of Desire). There is in this no thwarting of *pure* purpose in Reason, and it is not an antinomy that in its cognitions of Nature the Organized Being has the capacity to “change its mind about things” because the judgments involved are non-cognitive. Beliefs are not “true”; they are presentations held-to-be-true-and-binding without question, but only for so long as the presentation is judged formally expedient overall in reflective judgment.

How, then, can it come about that some “facts” stubbornly persist if Reason “does not care” whether objective concepts are maintained or not? Why should we not be subject to the most panoramic “blur” or kaleidoscopic “flux” in conscious perception, making a chaos of sensibility? The *practical task* of teleological judgment is the making of a *system* of Nature in experience, and this means *structuring* Nature. This is the power of adaptation and *adaptation is equilibrium between assimilation and accommodation*. General *Beurtheilung* gives itself over to neither total assimilation (which would produce a syncretic “blur of Nature”) nor total accommodation (which would produce a boiling “flux of Nature”). A “fact” *becomes* less easily abandoned the more it serves as expedient for the practical attainment of equilibrium, i.e. the greater and more fecund the *sphere of the concept* becomes in *scope of application*.

Where Joad goes astray is in failing to distinguish pure *transcendental* purpose (purpose necessary for the possibility of experience) from contingent cognitions of objects regarded as merely phenomenally purposive (hence contingent within general *Beurtheilung*). It is the former and not the latter that the processes of objective perception serve in building up a system of Nature, and the Nature (world model) so constructed is not “featureless.”

2. Let us now consider the second alternative.

Some pragmatists might, if pressed, admit that the flux of experience is not entirely featureless. They might concede that rudimentary marks or articulations are actually given in reality, and that it is the function of mind by selection, emphasis, and amplification to work up the embryonic

distinctions which exist in reality into the fully developed world of objects with which common sense is acquainted. Perception, then, would, on this view, consist of recognizing and working up distinctions which are already “there,” not of introducing distinctions which are not “there.” But, if this view of reality is taken, it is clear that our selection of fact can never be completely arbitrary. If the stuff of reality is composed of rudimentary objects which are given, and are given in a certain juxtaposition, and of rudimentary events that are given, and are given in a certain order, then it is clearly possible for the view of reality constructed by one mind to be either more or less correct than the view of reality constructed by another. Greater correctness would appear to be constituted by greater approximation on the part of the world of objects as constructed, to the world of rudimentary distinctions, as given: lesser correctness by an arbitrary construction which to all intents and purposes ignored the features of the presented reality.

But the notion that there may be a rudimentary order in reality which is given and not made, involving as it does the assumption that one man’s view of reality may be truer than another’s, suggests, indeed it necessitates, a different conception of the meaning of truth. If, in fact, there is some sense in which A’s view of reality, being largely based on the rudimentary features of the given, is truer than B’s which largely ignores them, is not this sense precisely that which is asserted to be the meaning of truth by the Correspondence theory of truth, the sense, namely, in which a true view of reality is one which corresponds with reality? [JOAD: 459-460].

In this second part of his criticism, Joad is setting up a follow-on criticism of “Pragmatism’s definition of truth,” which Joad caricatures as “that which gives emotional satisfaction” [JOAD: 460-461]. With regard to this follow-on criticism, it will here only be noted that: 1) Joad’s argument is going to revolve around a non-technical and on the whole unsatisfactory argument derived from Bertrand Russell on the question “what does ‘mean’ mean?”; 2) his characterization of the pragmatist’s definition of “truth” is unfair to James’ position, which is

*“The true,” to put it very briefly, is only the expedient in the way of our thinking, just as “the right” is only the expedient in the way of our behaving. Expedient in almost any fashion; and expedient in the long run and on the whole of course; for what meets expediently all the experience in sight won’t necessarily meet all farther experiences equally satisfactorily. Experience, as we all know, has a way of boiling over, and making us correct our present formulas [JAME1: 98].*

It is obvious from Joad’s statement of the “second alternative” that the copy-of-reality hypothesis has again been inserted into the discussion, and I think we have already adequately dealt with the fallacy that attends this hypothesis. What is interesting for our consideration here is what Joad’s argument might look like if it were properly transformed into the Copernican perspective. It is not objectively valid to say that either “the flux of experience” or “reality” gives “rudimentary marks or articulations” if by either “experience” or “reality” one has in mind for either of these terms some *Ding an sich*. With Nature, on the other hand, the affair is entirely different because, as the world model the Organized Being makes for itself, Nature *is not* “featureless.” Indeed, concepts *are* marks of objects (not “things”), and the manifold of concepts is the systematic determination of the cognition of Nature. Seen from this perspective, it is clear that the “selection of fact” is not “arbitrary” because of the process of equilibration through a balance of assimilation and accommodation.

The two fundamental issues involved here are properly: 1) from whence does this process of structuring Nature take its start? and 2) what are the implications for “truth” required by this perspective? Understanding of the first issue requires the proper understanding of the third cosmological Idea under the judicial Standpoint. As for the second issue, this goes to what Kant said in the earlier quote regarding the difference between “conviction” and “persuasion.” We cannot hope to reach some Hegelian absolute material Truth or some Platonic Idea of Truth because Truth in either connotation is made a *thing-regarded-as-it-is-in-itself* – divorced from the thinking Subject and transcendental epistemology – and, as a *Ding an sich selbst*, passes beyond the horizon of any possible experience and therefore lacks *any* objective validity.

We do not know Truth in the connotation of a thing-in-itself; we *hold-to-be-true* through judicial beliefs, i.e. we have persuasions and convictions. It is only when what I hold-to-be-true of an *object* and what you hold-to-be-true of the same object (insofar as we agree “it” is the same object) are found to be in agreement when we compare them that we can speak at all of truth in any “universal” sense of the word. Childish ego-centrism *presupposes* that what the child holds-to-be-true is what everyone holds-to-be-true, and does so to such a degree that young children do not at all question the presupposition, as Piaget has so admirably demonstrated. Decentration, i.e. when the child comes to understand that his view of things is not universally shared by all, makes possible a process of induction from which emerges an idea of absolute Truth (be it that of Hegel or that of naive realism). But such Truth is better viewed, i.e. viewed with objective validity, as mere possibility of a common *conjunction* of all instances where we find collective congruence between the object and our cognitions, and perhaps without this idea humankind would not be disposed toward either science or religion. James seems to have glimpsed something like this.

The great obstacle to radical empiricism in the contemporary mind is the rooted rationalist belief that experience as immediately given is all disjunction and no conjunction, and that to make one world out of this separateness, a higher unifying agency must be there. In this prevalent idealism this agency is represented as the absolute all-witness which ‘relates’ things together by throwing ‘categories’ over them like a net. The most peculiar and unique, perhaps, of all these categories is supposed to be the truth-relation, which connects parts of reality in pairs, making of one of them a knower, and of the other a thing known, yet which is itself contentless experientially, neither describable, explicable, nor reducible to lower terms, and denotable only by uttering the name ‘truth.’

The pragmatist view, on the contrary, of the truth-relation is that it has a definite content, and that everything in it is experienceable. Its whole nature can be told in positive terms. The ‘workableness’ which ideas must have, in order to be true, means particular workings, physical or intellectual, actual or possible, which they may set up from next to next inside of concrete experience [JAME3: xvii-xviii].

When we turn our attention to the first proper question (“from whence does the process of structuring Nature take its start?”), we find that the first step in answering this question we have already taken in our answer to Joad’s first criticism above. Objective holding-to-be-true is *made*

*possible* by subjective holding-to-be-true from reflective judgments of belief. I can call nothing true that I *believe* to be untrue. What our theory must explain, in terms having practical objective validity, is the process by which *belief in objects* is *made* possible.

That such a process must have a regulative *a priori* principle of its operation is, I trust, an obvious requirement under the Critical Philosophy. Because belief is adjudicated by teleological reflective judgment, it is equally clear that we must seek this principle on the ground of the principle of formal expedience. Furthermore, because belief presentation in reflective judgment is not presented as cognition but rather as affection, the principle of the process of belief-making must be such that its frame of reference, i.e. the context of the principle, be that involving an Object of pure practical Reason.

Although he was not a Kantian, William James glimpsed this practical implication in a clear light in his pragmatic theory of truth:

Good consequences are not proposed by us merely as a sure sign, mark, or criterion, by which truth's presence is habitually ascertained, tho they may indeed serve on occasion as such a sign; they are proposed rather as the lurking *motive* inside of every truth-claim, whether the 'trower'<sup>11</sup> be conscious of such motive, or whether he obey it blindly. They are proposed as the *causa existendi*<sup>12</sup> of our beliefs, not as their logical cue or premise, and still less as their objective deliverance or content. They assign the only intelligible practical *meaning* to that difference in our beliefs which our habit of calling them true or false comports.

No truth-claimer except the pragmatist himself need ever be aware of the part played in his own mind by consequences, and he himself is aware of it only abstractly and in general, and may at any moment be quite oblivious of it with respect to his own beliefs [JAME3: 273].

Let us look at James' idea of "good consequences" as "the lurking motive" *inside* "every truth-claim." One way to regard the word "consequences" in this idea is to regard it in the connotation of "reflecting upon what happened." Such a connotation is *ex post facto*, carrying the implication that "something happened" and this happening was subsequently codified in a belief. I tend to think that this is the connotation James had in mind, and if so it is a connotation that suits the understanding of a ground of belief in accordance with physical causality, i.e. in accordance with the category of causality and dependency.

However, this connotation does *not* fit well with the idea of "good consequence" serving as a "motive" because the idea of a "motive" is "forward-referencing" insofar as a motive is regarded as being logically prior to that-which-is-motivated. If, on the other hand, we take "good consequences" in the connotation "*anticipation* of good consequences" we can make this idea better fit with the idea of a "good consequence" standing as a "lurking motive." But this, too, presents a problem and an issue if the connotation given to "anticipation of good consequence"

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<sup>11</sup> From the obsolete verb "trow." A trower is one who believes or trusts.

<sup>12</sup> Reason or justification of the coming forward or arising or emerging.

takes on an implication of temporal succession. How would the Organized Being in such a case have obtained *original* knowledge of a merely problematic future outcome in such a way as to justify calling this “belief” before the fact? Furthermore, although the categories of determining judgment meet up with the transcendental schemata of the pure intuition of time, *reflective judgment does not*. To use a metaphor, a reflective judgment “lives in the moment” (or, better, “for the moment”) in time. If “anticipation” is to carry a connotation of succession, this cannot be a connotation of succession *in time*.

The only other kind of succession left to us, with succession in time ruled out, is *logical* succession in the form of *ground to grounded*. But in this case, how are we to regard the context of the word “anticipation”? Or are we perhaps misguided to employ the idea of “anticipation” at all in the present context, and, if so, does the problem lie with James’ contention that “good consequence” is what is properly to be regarded as what “lurks” *originally* as a “motive” for “truth-claims”? We previously discussed at some length the topic of “anticipation” in Chapter 8. There, however, we also ran across another closely related topic, namely the law of compatibility or *lex sociabilitatis idearum*. This is the law of what Kant called the “fictive faculty,” which he described as “the capacity for intuition insofar as it is not entirely bound to time.” Does this not sound like it is more akin to the problem at hand? The law of compatibility was a product of the metaphysics proper of Rational Psychology (hence of the transcendental reflective perspective). Kant described the fictive faculty from this perspective in the following terms.

The fictive faculty is the capacity to have representations of things we have never seen. This is either Imagination or Fantasy<sup>13</sup>. Imagination is when *we* play with the power of imagination and fabricate something for certain ends and purposes. Fantasy is when the power of imagination plays with *us*. The former is voluntary, for we can cancel and direct it as we please, but the latter is involuntary. Each fabrication<sup>14</sup> must occur according to the analogy of experience, otherwise it is unbridled, unruly Fantasy. We can therefore fabricate nothing materially, but rather only formally. If the fabrication is according to the analogy of experience, then it is disciplined fancy. If it is involuntary, then it is specifically called unbridled fancy [KANT19: 253 (29: 884-885)].

But let us take a closer look at this idea of Kant’s *facultas fingendi*<sup>15</sup> or fictive faculty from the hypothetical reflective perspective of the judicial Standpoint. Our gateway for considering the fictive faculty from this perspective is via the principle of Analogies of Experience. We recall that

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<sup>13</sup> Here Kant introduced, as distinct technical terms, the words ‘*Imagination*’ and ‘*Phantasie*.’ His word ‘*Imagination*’ does not refer to the power of imagination as we have previously discussed it. It is a new term that he defines in the quote above. I distinguish these new terms in the translation by capitalizing them. Both terms have to do with the *manner of exercise* that the power of imagination is put to in the general processes of judgmentation and reasoning.

<sup>14</sup> *Erdichtung*. This word can also be rendered as “invention.”

<sup>15</sup> Literally, “(potential) power of shaping or arranging.”

this principle belongs to Rational Physics, hence provides a reference to the judicial Idea of continuity in Nature for the fictive faculty of representation. The general principle is

Experience is possible only through the representation of a necessary connection of perceptions [KANT1a: 295 (B: 218)]

insofar as this principle refers to *experience* (judicial Standpoint). With respect to *appearances* (theoretical Standpoint) this principle is understood in the form Kant gave in the first edition, i.e.,

As regards their *Dasein*, all appearances stand *a priori* under rules of the determination of their relationships to each other in one time [KANT1a: 295 (A: 176-177)].

Objectively, the rules of determination of relationships for appearances are the categories of understanding, and the appearances and their relationships are formed in the free play between the process of determining judgment and the synthesis of imagination in apprehension and comprehension. Judicially, insofar as the system of experience is concerned, the principle of the Analogies of Experience calls for necessity in the connection of perceptions. Such a necessity cannot be vested in the matter of sensation in sensibility because this belongs to the contingent in experience. Perceptions are *made from* sensations (including those sensations we call feelings). Determinant judgments find particular concepts to be subsumed under given general ones, but the original finding of these general concepts falls to reflective judgment, in accord with the principle of formal expedience of Nature, *for experience*. Generalizing reflective judgments mark intuitions which pass to concepts as inferences of ideation, analogy, or induction. The intuitions for these concepts form through the *Verstandes Actus* in sensibility and pass over to determining judgment through the synthesis of re-cognition in the power of imagination (figure 9.3.1).

The representation of a *necessary* connection of perceptions is connection *made necessary* in an act of teleological reflective judgment, and this necessitation is nothing else than a presentation of belief *holding-to-be-true-and-binding* in reflective judgment. The *objective* capacity for making this representation through the interplay of the processes in judgmentation is what is meant by the idea of the fictive faculty. (An *original* concept is a concept of an object not “noticed before” by the Organized Being, thus the fictive faculty is a creative capacity). Continuity in Nature (objectivity) requires that representations of appearances be given a *coherent* context in the *nexus* of time (continuity of the judicial Idea). The scope of continuity is an idea too large to be confined to merely a single moment in time, because continuity implies continuity “in the past” (previous perception), “in the present” (the moment in time marked by reflective judgment), and in problematical anticipations “of the future.” A continuity-enforcing belief is, of course, a presentation “at this moment” in time, but to have *rules* of determination for

the connection of perceptions reflective judgment must be able to, metaphorically, “freely roam the landscape of time” in making its determinations. Thus, its rules *can not be bound by the rules of time*, as the rules of concepts must be, but instead be *rulings on* determinations in time.

Now, the fictive faculty must itself be subject to rules *a priori*, namely the *momenta* of teleological reflective judgments. Therefore, presentations of belief are not “left to chance” (although “what” is believed, i.e. the object of appearance, is a contingent matter of experience). This is, of course, the *in mundo non datur casus* of the law of continuity in the judicial Idea. When Kant speaks of “playing with our power of imagination” or of this power “playing with us,” this mental play is, so to speak, a game with rules. Especially for very young children, this mental “child’s play” is a serious business, namely that of the growth of intelligence.

*Observation 41.* – Until 0;1 (8) I noticed nothing in Laurent resembling a vocal circular reaction. His phonation only consists of cries of hunger and pain or in wails preceding and prolonging the cries. True, at 0;0 (9) Laurent makes a sound similar to *aha*, without crying, but only once; usually this sound precedes crying. On the other hand, beginning 0;1 (8) vague voice exercises may be observed, but these could be the beginning of a wail interrupted by a visual or auditory interest. At 0;1 (9) on the other hand, the wailing is maintained for its own sake, for several seconds before the crying. As soon as the first cry ensues, I imitate Laurent’s wailing; he then stops crying and begins to wail again. This first vocal imitation seems to me to substantiate the existence of circular reaction. If imitation of others exists, there also exists, in effect and *a fortiori*, imitation of oneself, that is to say “circular reaction.” At 0;1 (15) I note a sort of fleeting *arr* or *rra*, and at 0;1 (20) a sound resembling *en* indicating contentment interspersed with sucking-like movements in which he indulges, alone and wide awake. The latter sound reappears intermittently at 0;1 (22) and at 0;1 (26) in the same situations, whereas the sounds *aa* or *rra* which I emit in Laurent’s presence in order to copy him releases analogous sounds, after a smile, at 0;1 (22). At 0;1 (28) circular reaction begins with the sounds *aha*, *enhen*, etc., and at the third month vocalizations are produced. At 0;2 (7) Laurent babbles in the twilight and at 0;2 (16) he does this on awakening early in the morning often for an hour at a time.

*Observation 42.* – In certain special cases the tendency to repeat, by circular reactions, sounds discovered by pure chance may be observed. Thus at 0;2 (12) Lucienne, after coughing, recommences several times for fun and smiles. Laurent puffs out his breath, producing an indefinite sound. At 0;2 (26) he reproduces the peals of his voice which ordinarily accompany his laughter, but without laughing and out of pure phonetic interest. At 0;2 (15) Lucienne uses her voice in similar circumstances, etc. [PIAG1: 78-79].

These two examples provide us with some important clues for appreciating the fictive faculty. The first thing to note here is the children *reproduce* sounds, in a circular reaction, that an observer would say (as Piaget does) they have heard before. Superficially this sounds like Kant’s description of the fictive faculty is off base. *However*, the point of reference important here is not that of the observer but rather *of the child*. The mere fact that the adult observer distinguishes the details of the sounds (and knows they are sounds) in no way implies that the child has done so prior to the onset of deliberate circular reactions. Let us recall that all our empirical evidence tells us the child’s perceptions are of a syncretic character, and this means that what is perceived is a

whole of sensations without initial discrimination of the parts within that whole. In other words, we cannot presume that the child, upon first hearing an “arr” sound, clearly distinguishes just that “arr” sound out of the syncretic whole of his perception. *The first time he does so is the first time he actually perceives the appearance “aar.”* Circular reaction demonstrates re-cognition. The fictive faculty does not mark intuitions, leading to concepts, “out of thin air.” The Organized Being must have sensational matter for the *materia ex qua* of ideation. Metaphorically, the child may “spin straw into gold” but he must first have some straw with which to work. *In mundo non datur casus* holds even for childish Fantasy.

Second, the specificity of the circular reaction behavior producing the phonation provides a practical basis for justly saying the behavior is *purposive*, especially when it interrupts another action in progress (e.g. starting to cry). Of course, we have no objectively valid basis to suppose the child entertains such thoughts as, “Oh, what was that sound? I’ll think I’ll try to reproduce it.” In fact our theory contradicts such a supposition on many points. On the other hand, we have ample reason to conclude the opposite, i.e. that the child entertains *no* such thought as this. For instance it is absurd to make the positive supposition with a child who has not yet formed an objective real division between the Self and the not-Self. To say the behavior is purposive is not to say its purposiveness is vested in a thing *when the thing does not yet exist for the child*. We can say the behavior is purposive *for its own sake*, and that *this* purposiveness is *mediately expedient* for the apprehension of an object of appearance.

Third, the ground of purposiveness in the play behavior is subjective. It is not much of a stretch to say the child is *enjoying himself* (meaning the child is “making himself joyful”, i.e. “having fun”). To put a description on the object of purpose here, it can only be called satisfaction in the child’s state-of-being, i.e. a *state of happiness*. I remark in passing here that state of happiness is not equivalent to *Lust*, although it is clearly tied in to the *feeling* of *Lust*. But since this *psychological* object, i.e. the state of satisfaction, can be presented to the Subject only through affective perceptions, the *Dasein* of this object is *presented only as a judicial belief*, and the presentation of judicial belief is a perception but not an objective perception (an intuition or a concept). This presentation can be called a *nexus* of Desire, and called this from the judicial Standpoint. Formation of a judicial belief is a condition of objective belief.

Fourth, the circular reaction is *kinetic action* that serves the apprehension of appearance, and the *spontaneity* of the action can only be laid under the condition of an act of reflective judgment. The possibility of the action requires the ability to initiate and maintain it; therefore a connection between the act of reflective judgment and the somatic action *is necessary for the possibility* of the behavioral act. Consequently, it is transcendental and the idea of such a connection, and of the



innate sensorimotor-noetic capacity for the scheme, has *practical* objective validity. Likewise, through this same connection the fictive faculty obtains *its* practical objective validity.

In relationship to the cognitive processes, the fictive faculty exhibits three distinguishable modes, as we might expect from the three Analogies of Experience. Kant described them in the following way.

There are three distinct styles of the sensuous fictive faculty. These are the shaping of intuition in space (*imaginatio plastica*), the attaching of intuitions in time (*imaginatio associans*), and the affinity of the common lineage of representations from one another (*affinitas*) [AK7: 174].

Before the artist can produce a corporeal *Gestalt* . . . he must have constructed it in the power of imagination . . . and this *Gestalt* is thereupon a fiction<sup>1</sup> which, if it is unintentional, is called Fantasy . . . but if it be directed by means of choice, it is named *Composition*, invention [AK7: 174-175].

The law of association is: empirical representations that often follow one another bring about a habit in the mind, so that if the one be produced the other is also allowed to ensue [AK7: 176].

By affinity I understand the union of the manifold from the lineage of a ground [AK7: 177].

With regard to affinity, Kant was fond of using chemical affinity as an analogy for presentational affinity.

When we trace back to discover, from the judicial Standpoint, the origin (beginning) of appearances, what we find is that this ground must be placed in the presentational and representational powers of the Organized Being himself. Ultimately, this origination can only be regarded as grounded in the actuality of the transcendental Subject (the transcendental *I* of apperception), and beyond this point we cannot proceed with objective validity. Hence, as a ground, **the causality of freedom is the absolute origin (beginning) of all appearances**, and therefore the series of conditions comes to *absolute completeness* at this point since no further regression is possible with objective validity. *This is the third cosmological Idea from the judicial Standpoint.* The nature of Nature begins with the practical nature of the Organized Being.

The third cosmological Idea is the acroam of the law of compatibility. The law of compatibility, in its turn, serves as a standard for practical Reason, a *condition of equilibrium*. For the origin of appearances the series finds absolute completion only in the *Dasein* of transcendental Subject. The Subject stands as cause (in the hypothetical reflective perspective of the judicial Standpoint), and the causality is laid to the *Kraft* of the Subject. Here we should understand that the causality of freedom, while not bound to sensuous conditions, is nonetheless bound to the formula of the categorical imperative of pure practical Reason. Freedom, therefore,

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<sup>1</sup> *Dichtung*. The word means “fiction” in the connotation of an invention or product of imagination. It does not carry the connotation of being false (e.g., we do not regard a poem as being “false”) and does not denote some kind of mistake.

does not vanish into mysticism in the Critical Philosophy because we understand transcendental freedom through the administration of the categorical imperative seen as *first* acroam of activity.

This completes our exposition of the third cosmological Idea from the judicial Standpoint. Only one thing more need be commented upon. The dynamical cosmological Ideas are the Ideas of form in reflective judgment. As such they can be regarded as a formal element in Kantian Logic. In contrasting this Logic with mathematical logic, we distinguish this difference. Mathematical logic does away *not only* with the material content of logical deduction, but *also* does away with all *real context*. The dynamical cosmological Ideas are Ideas of context and coherence in the process of reflective judgment, and without context there can be no presentation of reality for any object. Failure to recognize this difference produces fallacies in the criticism of philosophical positions, as James noted in his response to Russell's criticism of Pragmatism.

Mr. Russell himself is far too witty and athletic a ratiocinator to repeat the slander dogmatically. Being nothing if not mathematical and logical, he must prove the accusation *secundum artem*, and convict us not so much of error as of absurdity. I have sincerely tried to follow the windings of his mind in this procedure, but for the life of me I can only see in it another example of what I have called vicious abstractionism. The abstract world of mathematics and pure logic is so native to Mr. Russell that he thinks that we describers of the functions of concrete fact must also mean fixed mathematical terms and functions. A mathematical term . . . is self-sufficient, and terms of this sort, once equated, can be substituted for each other in endless series without error. Mr. Russell, and also Mr. Hawtrej . . . seem to think that in our mouth also such terms as 'meaning,' 'truth,' 'belief,' 'object,' 'definition,' are self-sufficients with no context of varying relation that might be further asked about. What a word means is expressed by its definition, isn't it? The definition claims to be exact and adequate, doesn't it? Then it can be substituted for the word – since the two are identical – can't it? Then two words with the same definition can be substituted for each other, *n'est-ce pas?* Likewise two definitions of the same word, *nicht wahr*, etc., etc., till it will be indeed strange if you can't convict someone of self-contradiction and absurdity.

But may not real terms, I now ask, have accidents not expressed in their definitions? and when a real value is finally substituted for the result of an algebraic series of substituted definitions, do not all these accidents creep back? Beliefs have their objective 'content' or 'deliverance' as well as their truth, and truth has implications as well as its workings. If any one believes that other men exist, it is both a content of his belief and an implication of its truth, that they should exist in fact. Mr. Russell's logic would seem to exclude, 'by definition,' all such accidents as contents, implications, and associates, and would have us as translating all belief into a sort of belief in pragmatism itself – of all things! [JAME3: 276-279].

### § 2.3 The Judicial Cosmological Idea of Quantity

From the theoretical Standpoint the mathematical-cosmological Ideas are Ideas of the sensible context of Nature that move reasoning toward the unconditioned in sensible experience. The process of Reason here is open-ended insofar as the construction of the manifold of concepts is concerned. Transformations of the structure of experience as represented in the manifold of concepts are effected in an on-going process of equilibration, and in this sense equilibration is the

Object of the mathematical-cosmological Ideas considered from the theoretical Standpoint. But considered from the judicial Standpoint, the mathematical-cosmological Ideas are Ideas of the matter of *nexus* in the manifold of Desires. The first cosmological Idea stated from the theoretical Standpoint is the Idea of absolute completeness of the composition of the given whole of all appearances. We must next examine what this Idea means considered judicially.

Considered theoretically, the cosmological Idea of Quantity requires that transformations of experience are conditioned in part by the structure in experience (see Chapter 4 §2.3). We here view experience as the *state* of a system. Accommodation of the manifold of concepts during the production and placement of new concepts must be balanced by assimilation of the new concepts such that the structure of the system as a whole is preserved. Because the system of experience, represented as Nature in the manifold of concepts, is open-ended, it is not valid to speak of an absolute completion of the manifold as having been made actual. Thus the first cosmological Idea considered theoretically expresses no more than an Ideal and a task for speculative Reason. This is the *theoretical* context of “absolute completeness of the composition of Nature.”

In Chapter 4 it was stated that “Reason tolerates no islands of experience cut off by a non-experiential sea.” In the previous treatment of the first cosmological Idea, this statement was understood to mean that the direction given to understanding by speculative Reason aims to bring together the highest concepts in the manifold of concepts, subsuming them under common marks so that, to use a simile, structuring constructs a kind of pyramid of concepts, working toward achieving a single apex. As an Ideal and a goal, this describes an *interest* of speculative Reason. However, there are two considerations we must now enter into, and these considerations take us over into the judicial Standpoint.

The first consideration is from empirical fact. Piaget’s work has demonstrated clearly that the infant’s earliest sensorimotor schemes are initially uncoordinated with one another. When the circular reaction makes its appearance in behavior, what we can observe of this behavior indicates that the infant seems quite content to focus himself totally on performing these circular reactions. Put another way, we can speculatively regard each scheme at this stage as constituting its own “island of experience,” and there is nothing in the observable behavior of the infant suggesting to an observer that the infant is concerned about, much less strives to combine, these “isolated islands.” It is true that eventually the primary circular reactions are extended to secondary circular reactions and that schemes eventually come to be coordinated. But this is a relatively long time in coming, and the existence of this interval seems to cast doubt on the idea that speculative Reason is intolerant of “islands of experience.”

This first consideration poses a puzzle from the theoretical Standpoint, but in considering its

solution we are bound to ask the obvious question, which constitutes the second consideration: From the point of view of the *Subject*, when is it objectively valid to speak of the existence of “islands of experience”? If we are to say that speculative Reason tolerates the existence of no such islands, *we must also presume awareness of such islands on the part of the thinking Subject*, and awareness of such islands implies the presentation in judgment of either their *Dasein* or of a ground for the inference of their *Dasein*.

The metaphor of islands of experience is a metaphor for *awareness of a gap in experience*. Now, the principle of the synthesis in continuity in the aesthetic Idea is *in mundo non datur hiatus*. The aesthetic Idea joins noetic *Kraft* in the adaptive *psyche* to the matter of composition in aesthetical reflective judgment, and so awareness of a gap in experience is expressed through the judgment of a feeling of *Unlust*, ergo by presentation of a disturbance to the Organized Being’s state of equilibrium. Brought to consciousness by this presentation, this disturbance is an effect in the *Existenz* of the Self, and the effect is a ground for judging the *Dasein* of a cause in judgmentation in general (*Beurtheilung*). We call this a **real gap**.

However, judgment of the *Dasein* of a cause (“the gap in experience”) does not lie with the process of aesthetical reflective judgment. The aesthetical affective perception is merely an energetic of Reason, and the aesthetical reflective judgment, while providing a focal point for reasoning, provides no orientation or direction for Reason. It merely judges Reason’s handiwork without providing a prescription for improvement. The orientation of Reason falls to the process of teleological reflective judgment *in judging the meaning of the feeling*. Still, though, the act of teleological reflective judgment presents no cognition, ergo must still work through affective presentation, ergo goes to the determination of the subject-matter of belief (that is, the Modality in reflective judgment). For the judging Subject there can be no real gap in experience until it believes a gap exists, and the presentation of such a **judicial belief** is subjective, not objective.

There is in this another subtle yet very important factor, which we can express by putting it in the form of a question: What in affect *constitutes* a real gap? For example, the great majority of scientists are specialists, knowledgeable in their field but untrained and unlearned in other fields. Furthermore, the scientist *knows* there are areas of knowledge of which he is ignorant. Yet this knowledge of a “gap in his knowledge” most often does *not* act as a spur to “fill in the intellectual gaps” in his knowledge. Using myself as a particular example, I have almost no idea how to grow cotton, and, right up to this present minute as I write this sentence, I have never had any interest in learning how this is done. To acknowledge a gap in one’s *knowledge* is not the same as *feeling a gap as a disturbance*. In the context of the transcendental Ideas, the mere *idea* of a “gap in knowledge” by itself involves no *direct* interest of Reason with regard to the form of the manifold

of concepts. Its context as an *object of judgment* is that of a merely **logical gap**. One can say that this character of logical gaps has a partial description in terms of a formula,

“I don’t know” + “I don’t care” = “not a real gap.”

There can be no real gap where there is no interest of Reason involved and such an interest is always reflected in *Lust* and *Unlust*. If some fool was willing and able to pay me a million dollars in exchange for a bushel of home-grown cotton from my garden, I’m reasonably sure I would *develop* an interest in knowing how to grow it, but it wouldn’t be for love of knowing how to grow cotton and I’d want to see a signed contract and some earnest money put down first.

What, then, are we to understand as a sufficient condition for a judgment of interest by which affect is presented as a real gap? In the first place, an interest of Reason is always at root a *practical* interest, for Reason stands only in a mediate relationship to concepts. We touched briefly upon the Kantian idea of interest in Chapter 14. There we saw Kant define “interest” as “a principle which contains the condition under which a capacity of the mind is exerted.” We will distinguish this type of interest from Relation in aesthetical judgment by using the term **transcendental interest**. Reason, as the executive capacity of *nous*, is a faculty of principles and determines the interests of all the powers of *nous* (including its own).

That which is required for the possibility of any use of reason generally, namely that its principles must not contradict one another, makes up no part of its interest but is instead the condition of having reason generally; only its extension, not mere harmonization with itself, is reckoned as its interest [KANT4b: 236 (5: 120)].

Kant identified three Critical *a priori* principles of the general faculty of mind for what he called the “higher capacities of the soul” – that is, the capacities of mind that are regarded as containing a property of autonomy [KANT5c: 82-83 (5: 196-198)], [KANT5c: 44-46 (20: 244-246)]. Understanding is the higher capacity of the faculty of knowledge, and its *a priori* principle is *lawfulness* (in the pronouncements of the process of determining judgment through the categories of understanding). The power of reflective judgment is the higher capacity for the feeling of *Lust* and *Unlust*, and its principle is formal expedience. Reason is the higher capacity for the appetitive power and its principle is that of the *Endzweck* (“goal” or “final purpose”), which he tells us we are to understand as the principle of *expedience that is at the same time a law*. These three principles – of lawfulness, of expedience, and of final purpose – are the three highest interests of *nous*. Owing to the complete reciprocity between *nous* and *soma*, we can also say that any noetic representation manifesting a particular interest will have a somatic correlate.

In Chapter 14 we said that the *momenta* of Relation in aesthetical reflective judgment, viewed from the transcendental-judicial perspective, were *value expressions* of interests. We

could, perhaps equally well, call these *momenta* the *feeling of interest*. But this does not mean that these feelings *determine* an interest as a ground; rather, these feelings *present the consciousness* of an interest. In the Janus-like organization of the process of reflective judgment, aesthetical reflective judgment, metaphorically speaking, faces toward sensibility. Teleological reflective judgment, on the other hand, faces toward Reason's appetitive power and *psyche's* power of motoregulatory expression. Feelings are *evaluations*, but that which is evaluated, i.e. that which expresses interests in the particular, is Desire in the manifold of Desires, and the form of this manifold is the handiwork of the teleological power of judgment. To aesthetical reflective judgment belongs the matter of desire (*Begehren*), but to teleological reflective judgment belongs desiration (*Begehrung*), which we understand to mean the *form* of desire in a judicial *ruling*. To reflective judgment as a whole belongs the manifold of Desires (*Mannigfaltige Begehrungen*)<sup>2</sup>. Kant partly explained the relationship this has to pure Reason in the following way.

Will is thought as a capacity to determine oneself to acting *in conformity with the representation of certain laws*. And such a capacity can only be found in rational beings. Now, what serves the will as the objective ground of its self-determination is purpose, and this, if it is given by reason alone, must hold equally for all rational beings. What, on the other hand, contains merely the ground of the possibility of acting, the effect of which is purpose, is called a *means*. The subjective ground of desire is the mainspring<sup>3</sup>, the objective ground of volition is the motive<sup>4</sup>; hence the distinction between subjective purposes, which rest on mainsprings, and objective purposes, which come from motives which hold for every rational being. Practical principles are *formal* if they abstract from all subjective purposes, whereas they are *material* if they have put these, and consequently certain mainsprings, at their ground. The purposes that a rational being proposes at his discretion as *effects* of his acts (material purposes) are all only relative; for only their mere relationship to a specially disposed appetitive power of the subject gives them worth, which can therefore furnish no universal principles, no principles valid and necessary for all rational beings and also for every volition, that is, no practical laws. Hence all these relative purposes are only the ground of hypothetical imperatives [KANT4b: 78 (4: 427-428)].

. . . From the idea of a mainspring arises that of an *interest*, which could never have been attributed to any being unless it has reason and signifies a *mainspring* of the will as it is *represented by reason*. Since in a morally good will the law itself must be the mainspring, the *moral interest* is a pure sensuous-free interest of naked practical reason. On the idea of an interest is based that of a *maxim*. A maxim is therefore morally genuine only if it rests solely on the interest one takes in compliance with the law. All three ideas, however – that of a *mainspring*, of an *interest*, and of a *maxim* – can be applied only to finite beings. For they all presuppose a restriction of the nature of a being, in that the subjective property of its choice does not of itself accord with the objective law of a practical reason; they presuppose a need to be impelled to activity by something because an inner hindrance is opposed to it [KANT4b: 204 (5: 79)].

Metaphorically, if the aesthetical judgment of a value expression is a kind of “mainspring” for expressing an elastic urge or impulse, we yet need something to “wind the clock,” and this is a

<sup>2</sup> see Chapter 12 §2.3. A more literal translation would be “manifold of desirations.”

<sup>3</sup> *Triebfeder*. Most translators render this as “incentive,” which is a reasonably good connotation for Kant's term *from the judicial Standpoint*. Literally translated, the word has the connotation of an “elastic urge.”

<sup>4</sup> *Bewegungsgrund*. Literally, “ground of motion.” In this connotation “motive” is problematical.

role for which teleological judgment is well suited.

Referring back to Figure 17.5.1, the organization of information flow in judgmentation and reasoning, we can identify an information loop running from sensibility to reflective judgment to motoregulatory expression and back again (through the kinaesthetic feedback) to sensibility. There is also an inner side branch *within* this loop that runs from reflective judgment to practical Reason to motoregulatory expression. We will call this loop the **activity loop**. The representation of equilibrium in the activity loop is a pattern of activity in which is found no innovation (see Chapter 15 §7.5, the *Lust* principle). Now, it is well known in the mathematical science of system theory that in a feedback structure characterized by cyclic rather than static stability, such as the activity loop, one cannot unambiguously pin down a unique point of origin for activity patterns in the loop. Indeed, loop activity is an emergent property arising merely from the fact that the structure is recurrent. There are two hypothetical situations possible within the activity loop that are relevant to our discussion of the cosmological Idea of Quantity.

First, let us suppose that from some sensory datum an innovation is presented in sensibility. There are two possible consequences that can follow from this. In the first case, the innovation in sensibility can produce an accompanying innovation in reflective judgment leading to an innovation in the presentation of the manifold of Desires. The *meaning implication* of this innovation can produce an innovation in motoregulatory expression which, if not suppressed by a “veto” from the determination of appetitive power in practical Reason, can produce further innovation (through kinaesthetic feedback) in sensibility. If these innovations build up and lead to the establishment of a new equilibrium in the activity loop, we say that *an interest has been expressed*.

In the second case, it is possible that the buildup of new innovations in the activity loop can be quenched by the determination of appetitive power. This means that a Desire presented as possibly expedient for pure practical Reason has failed to be made into an appetite. The possible new cycle of equilibrium is ruptured before it can be established and, *ceteris paribus*, the activity loop returns to its former state of equilibrium. In this case we say that rupture and extinguishment of the new innovations in the activity loop expresses *lack of interest* in the stimulus.

Next, let us consider the possibility in which some innovation first introduced in sensibility is superseded (overtaken) by some *other* innovation, e.g. one that follows from an effect on motoregulatory expression through a determination of appetitive power that alters the ground of presentation in the manifold of Desires by reflective judgment. In this case, we can have two general outcomes, like before; the difference here is that if an interest is expressed, *the interest is not grounded in the original sensuous datum*. It can instead be the product of re-presentation in

the synthesis of imagination owing to the employment of determining judgment by an orientation of speculative Reason. In this case, we can say that the original innovation on sensuous grounds was extinguished by rupture of the activity cycle it would otherwise have lead up to, but that innovation laid to this other dynamic in the manifold of Desires did lead to a new cycle of activity and a different equilibrium. This we can call *the expression of an intellectual interest*.

This, then, is our description for the *Realerklärung* of the idea of “interest” in terms of *practical activity*. It is only when there is a buildup of a new pattern of activity with rupturing of the old cycle that we can speak of a disturbance, and this disturbance constitutes the practical explanation of the idea of a *real gap*. From this understanding of the *practical* implications of the terms “interest” and “gap” we come to our explanation of the first cosmological Idea. Modality in reflective judgment connects to noetic organization in the adaptive *psyche* through the idea of continuity in Meaning. The negative principle of this is the *in mundo non datur fatum* of continuity. “Fate” is necessity in Nature without cause, and the principle disallows this. But because we are dealing here with an inner Self-determination of the Organized Being, through its own spontaneity in representation, we cannot call upon physical causality (the causality judged in the category). That leaves us only with psychological causality, i.e. the causality of freedom in pure Reason.

Teleological Quantity is the form of the matter of desiration in the manifold of Desires. As such, it speaks to the aggregation of presentations in judicial belief. From what we have just seen, we can now understand the nature of this aggregation as an Idea of *composition of interest* in the *form of activity* in the activity loop *as this is presented* in teleological reflective judgment. Completeness in this presentation can only be regarded as establishment of an equilibrium in activity and this insofar as the consciousness of the Organized Being is concerned. In this regard, the Idea of absolute completeness in the composition of the given whole of *all* appearances is an Ideal of absolutely complete equilibrium in judgmentation, which in other words is to say it is a regulative principle of **absolutely complete equilibrium in judgmentation through the suppression or equilibration of innovations**. This is the judicial-cosmological Idea of Quantity. It is the law of form of composition for logical expedience in teleological reflective judgment.

The objective validity in the presentation of a belief can only be practical objective validity, under this regulation of the principle of formal expedience of Nature, insofar as this validity concerns composition of meanings. In reflective judgment the matter of composition in teleological reflective judgment judges the meaning of the feeling of *Lust per se* in terms of an orientation to action, this orientation considered in the context of an empirical meaning under the principle of continuity in judgment, i.e. in respect to transcendental Meaning (coherence in the



context of life). Empirical meaning is the function of Modality in reflective judgment, and we must consider it, in a teleological judgment, both in terms of the form of composition of belief (Quantity in teleological judgment) and in terms of the matter of composition of belief (Quality in teleological judgment). The latter we are soon to take up; here we have dealt with the former.

## § 2.4 A Psycho-Neurological Example

In one of those odd little coincidences that occasionally add spice to life, just as I was completing the typing of the draft of the previous section there arrived in the mail an issue of *American Scientist* containing an article well-suited to serve as an empirical illustration of the theory just presented. I will here merely summarize the high points of what this article says and refer you to the original article<sup>5</sup> for the details.

The authors, Obhi and Haggard, summarize findings from a number of experiments, most of which use what is known as a “Libet-like” technique (named after the 1983 work of Benjamin Libet et al.). The scientific question being explored by such experiments is described as follows:

The question is: How do we go from mundane, everyday actions – like turning on a light – to developing a sense of self as a causal agent? One can try to answer that question by examining the subjective sensations that humans experience during actions, the corresponding activities in the nervous system and the subjective experiences of individuals who do not have an ordinary sense of control.<sup>5</sup>

The “classical conception of free will” presumes voluntary actions follow a particular sequence of events: 1) formulating a goal; 2) formulating an intention; 3) initiating a movement; and 4) executing and completing the movement. Because neuroscience has been successful in identifying major regions in the brain that appear to be those involved in movement, it becomes possible to detect activity in these brain regions, e.g. by electroencephalograph (EEG) measurements. The nature of this type of instrumentation is such that gross activity in these regions can be detected, although the method does not provide detailed data at the level of individual or very small groups of neurons. Two types of EEG phenomena in particular are key to Libet-like experiments. One is an activity trace known as the readiness potential (RP); the other is a related activity trace known as the lateral readiness potential (LRP). In addition, it is also possible to detect electrical activity in muscles involved in the actual movement, e.g. by means of an electromyogram (EMG). Finally, because the experimental subjects are human beings it is possible to obtain from them self-reports on when they become conscious of their own will to execute a move and when they perceived that they actually began to move.

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<sup>5</sup> S.S. Obhi and P. Haggard, “Free will and free won’t,” *American Scientist*, vol. 92, no. 4, July-August, 2004, pp. 358-365.

In Libet-like experiments the subjects are asked to perform certain tasks under conditions such that they are able to self-report on these two psychological factors (“W” or their first consciousness of the “will” to do something, and “M” or their perception of actually starting to move). In addition, the two physical factors (brain activity instrumented with an EEG and actual muscle activity) are measured using recording instruments. The experiments reported have produced five major findings.

First, as expected, the subjects’ self-reports show that “W” precedes “M” – i.e. the subject becomes consciously aware of the “willingness to move” before he becomes aware of actually starting to move. Second, measurement of the RP (which is an objective measure of activity in the motor cortex of the brain) shows that *the RP precedes “W”* by about a third to one-half of a second. This means that motor activity in the brain actually begins prior to the subject being conscious of any “will” to execute a movement. This is, of course, completely contrary to the “classical conception of free will” described above. Third, the LRP develops about half a second before the actual movement, and the actual movement happens after the RP. “W” is found to co-vary with the LRP – in other words, consciousness of “W” appears to correlate with LRP activity in the motor cortex. Obhi and Haggard interpret this result as follows:

This suggests that awareness of intention correlates with the choice of *which* movement will be made, rather than simply that *a* movement of some kind will be made. This suggests that the conscious experience of control may be linked to the brain process that selects how we will use a particular movement to achieve a general goal. . .

However a scientist looks at all the data, the brain is going full speed ahead well before a person experiences the conscious intention of moving. Consequently, no role appears for conscious processes in the control of action – or so it might seem. Although the results of Libet and one of us (Haggard) cast doubt on whether conscious processes cause actions, these data remain consistent with the idea that conscious processes could still exert some effect over actions by modifying the brain processes already underway. The fact that conscious awareness of intention precedes movement by a couple of hundred milliseconds means that a person could still inhibit certain actions from being made. Libet apparently replaced *free will* with *free won’t*.<sup>5</sup>

Fourth, the subjective awareness of “M” preceded the onset of muscle electrical activity. Obhi and Haggard give a value of 0.086 seconds for this anticipation. This means that the subject experiences the start of a movement before the muscles involved actually begin to move. The implication here is that the earliest conscious objective perception a person has that “I am doing something” likely has its neural basis in signaling activities in what are known as the pre-motor areas of the cerebral cortex rather than from actual feedback from the peripheral nervous system (which monitors muscle activities) or from the spinal cord (which is known to “monitor and report back” to the brain, so to speak, what is going on at the muscle command level of the body). Here I think it is worthwhile to remind ourselves of Damasio’s “as if body loop” idea, which would seem to be consistent with the findings reported in the Obhi-Haggard paper. Fifth and

finally, the subjective perception of “W” precedes actual movement, which, as Obhi and Haggard point out, implies that a person can still *inhibit* particular actions from taking place even after the premotor and primary motor cortices have “sprung into action.” This phenomenon is what is implied by their phrase “free won’t.”

These experiments reveal that the chain of causation going from our intentions to our actions is not in the intuitive direction. If we are not aware of our actions when we believe we are, then what are we perceiving? This question leads us directly into a minefield that surrounds the free-will debate. Instead of risking a philosophical firestorm, we might sidestep free will and pursue more scientifically accessible questions, such as: How does our conscious sense of free will arise from the neural activity of the brain?<sup>5</sup>

Avoiding the risk of a “philosophical firestorm” and sidestepping the “free-will minefield” are, of course, not options for us in this treatise. Let us start with “W,” the subject’s self-reported “conscious awareness of the will to move.” It is not possible from self-reports to say unambiguously exactly what it is that the subjects are self-reporting, but it *is* clear that whatever this is, it is the self-report of *an object* (albeit that as appearance this object is an object of a cognition of appearance of the Self). This is because the affective perceptions in reflective judgment are autistic representations in the Piagetian sense of the word “autistic”. In other words, affective perceptions “themselves” cannot be communicated. Communication of how one “feels” is only possible by means of objective perceptions *that have context and meaning for the reporting Subject*. The scientific facts reported by Obhi and Haggard are another nail in the coffin of Descartes’ homunculus, but appear to be completely consistent with the organization of information flow depicted in Figure 17.5.1. Before it can be possible to grasp the appearance in cognition, there must already be a practical interest unfolding, and this is what happens in the actions of the activity loop. The phenomena of the readiness potential (RP) and the lateral readiness potential (LRP) appear to be somatic correlates of acts of presentation in teleological reflective judgment with motoregulatory expression.

The reported findings indicate that “W” is related to specification of movement rather than a general arousal of motoregulatory expression. This is completely consistent with the picture presented in our theory of an appetitive power that must make an appetite by *selection* from a plurality of possible presentations of expedience. We recall from James’ theory that actual movement was held to be the survivor of a “blocking process” of conflicting “impulses” in the brain. Kant’s theory, likewise, presents us with this sort of “veto process” by the executive capacity of practical Reason, which the phrase “free won’t” in place of “free will” communicates rather handily.

What is essential in every determination of will by the moral law is that, as a free will – and so not

only without the cooperation of sensuous impulses but even with the rejection of all of them and with infringement upon all inclinations so far as they could be opposed to that law – it is determined solely by the law. So far, then, the effect of the moral law as mainspring is only negative, and as such this mainspring can be known *a priori*. For all inclination and every sensuous impulse is based on feeling, and the negative effect on feeling (by infringement upon the inclination that takes place) is itself feeling. Hence we can see *a priori* that the moral law, as ground of determination of will, must by thwarting all our inclinations effect a feeling that can be called pain; and here we have the first and perhaps the only case in which we can determine *a priori* from concepts the relationship of a cognition (here it is one of pure practical reason) to the feeling of *Lust* and *Unlust* [KANT4b: 199 (5: 72-73)].

Although in this quote from *Critique of Practical Reason* Kant is primarily concerned with “higher level” maxims as moral maxims (and has again employed the phrase “moral law” in place of “categorical imperative”), the only *positive* statement he ever makes regarding *practical judgments of choice* is that these judgments “infringe” upon possible appetites and never that such practical determinations of appetitive power “favor” or “enforce” any particular appetitions. In various places Kant makes it clear that pure Reason, as a capacity, does not “feel” nor does it judge objects or cognitions of determining judgment<sup>6</sup>. And because these acts are no part of the logical essence of the power of Reason, it follows at once that what holds above for higher and abstract ideas of moral maxims must also hold true for the more mundane acts of reflective judgment. The power of pure Reason does not legislate actions but rather *regulates* them and exercises the executive authority of a “veto.”

This logical character of pure practical Reason coupled with the organization of the activity loop in Figure 17.5.1 begins to paint the picture for us of how it is possible to effect the “Margenau transformation” from teleological purpose to representation in terms of physical causality (a transformation you have perhaps been waiting to see with growing impatience for quite some time now). Instruments measuring an EEG cannot resolve for us the fine details of somatic activity patterns in the brain, thus cannot draw out very fine distinctions, but from our earlier explanation of how we are to understand the idea of *practical* interest – as the establishment and maintenance of equilibrium in activity pattern representation – we are in a position to better understand and appreciate the contradiction by experiment of the “classical conception of free will.” The power of will, as free will, cannot be viewed with any objective validity whatever as the *productive* action of a Cartesian homunculus; instead we understand that the adjective “free” means “not bound to determination by sensuous mainsprings.” Intelligible mainsprings arising from the free play of imagination and determining judgment in general *Beurtheilung* also have representations in sensibility, but the transcendental place of these

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<sup>6</sup> The “cognition” referred to in the quote above as “one of pure practical reason” is theoretical knowledge of the *Dasein* of “the moral law.” In other words, it is an idea deduced in one’s understanding of “will.”

representations comes not from the data of the senses but from thinking in judgmentation. The Subject-as-Object-of-appearance (phenomenon) must be regarded in Nature under the Relation of physical causality (category of understanding), but as *noumenon* (transcendental Subject) it is regarded under the causality of freedom. The latter merely sets down a boundary line for speculative Reason in understanding the unity of the Self and the *I* of transcendental apperception. To speak of free will in the more “classical” terms is to speak of nothing other than the cognition of an idea, namely that the assignment in phenomena of the seat of *psychological* causality is placed within the Self. This idea, slow to form in the infant, is the product of that eventful moment when the Subject first draws as a real division the distinction of Self and not-Self, i.e. when the Subject first begins to place himself as an object among objects. This idea is a concept with deep roots in the manifold of concepts, and so it should not be surprising that it exhibits such fecundity in each person’s understanding of him or her Self as an Object in Nature. The scope of this concept in application is vast beyond casual reckoning.

It may be that there are those who will object to the Critical theory on the misapprehension that we are subtly painting a seductive picture of the human being as merely a machine – an automaton. However, let us not lose sight of what was said in Chapter 12 regarding the objective validity of the idea of “life” and “living being.” The foundation for our calling something “living” or a “life form” *is rooted in the idea of one’s own psychological causality*, i.e. in an appetitive power as the capacity for making-actual objects of one’s representations. The connotation of the machine or the automaton is that of an object of which the logical essence is what Kant called “dead matter.” To make the idea of a human being over into strictly and *only* the limited idea of man-is-machine is to cut the reciprocity of *nous* and *soma* and then discard *nous*. But if one does that, one discards the ground of every objectively valid meaning of the word “life.” What the Critical theory discards is the utterly transcendent fantasy of “the ghost in the machine.”

## § 2.5 The Judicial Cosmological Idea of Quality

The last cosmological Idea is the Idea of absolute completeness in the division of a given whole in an appearance. Looked at from the theoretical Standpoint, in Chapter 4 we saw this Idea as a principle for a regressive synthesis in a series of conditions such that contradictions in the manifold of concepts are transformed by the addition of a condition into mere contraries. The impetus for such a synthesis is based on a negative cognition we described as “something is wrong” or “something is missing.”

When we consider this Idea from the judicial Standpoint we find in it a positive principle of synthesis, namely in the judgment of Kantian *Triebfedern* (mainsprings), the judgment of which

in teleological reflective judgment *grounds* the matter of composition for judicial belief. This positive principle is none other than the principle of happiness, which we first discussed in Chapter 13 (§7). Happiness *per se* is a judicial Ideal of the absolute condition of all dispositions for actions. The merely subjective judgment of expedience *for* happiness lies with the *momenta* of aesthetical reflective judgment, but the judgment of a specific desiration expedient for happiness falls to teleological reflective judgment, and presentation of such a desiration is a presentation held-to-be-binding by the Organized Being. The holding-to-be-true of a *cognition* of belief has for *its* condition of possibility the holding-to-be-binding of a desiration in the manifold of Desires. Desiration is subjective distinctness in judging happiness *in concreto*.

Truth, viewed judicially, is a logical perfection of understanding, just as happiness regarded judicially is an aesthetical perfection of sensibility. The idea of the latter obviously joins with the idea of the former (perfection of understanding) as a part of a whole. To better appreciate this, one must understand that all presentations in sensibility and reflective judgments are presentations of a product of synthesis (often by means of an anasynthesis), thus are *made* and not *given*. This distinction is part and parcel of Kant's distinction between what is givable (*dabile*) vs. what is given (*datum*). The measure of achievement in the state-of-happiness for the Organized Being is the degree of satisfaction of *all transcendental interests* (the principles of the capacities of *nous* containing the condition of their exercise) in the activities of the Organized Being.

Now, the distinction between interest and *transcendental* interest requires a further elucidation. In his analytic of aesthetical judgment [KANT5c: 89-104 (5: 203-219)] Kant spoke of the satisfaction in *the pleasant*, the satisfaction in *the good*, and the satisfaction of what he called "the judgment of taste." The first two of these, he said, each involved an interest, but the third, he said, was a satisfaction *without* interest (and an object in which such a disinterested satisfaction is vested he called "the beautiful"). Taken at first glance, this part of *Critique of the Power of Judgment* seems to stand in stark contradiction to what was just said about satisfaction of all transcendental interests. However, this seeming contradiction is not in fact a contradiction. The interest involved in satisfaction in the pleasant is a sensuous, therefore empirical, interest *in concreto*. The interest involved in satisfaction in the good is an intelligible, hence speculative, interest. But a *transcendental* interest refers only to the *principles* of the capacities for understanding, for judgment, and for Reason. That which *is interesting* in a pleasure or in a good is something altogether different. The "satisfaction in the beautiful" is disinterested only in the sense that the "beautiful object" was not pre-presented as an object by design (objective disinterest). However, the satisfaction felt "in the beautiful" nonetheless is a satisfaction *grounded* in an interest, namely the *transcendental* interest of the principle of formal expedience.

But because this principle serves the categorical imperative of practical Reason it is also to be regarded as *the interest of equilibrium* in the state-of-satisfaction.

*Taste* is the capacity of judgmentation<sup>7</sup> of an object or a manner of representation through a satisfaction or dissatisfaction *without any interest*. The object of such a satisfaction is called *beautiful* [KANT5c: 96 (5: 211)].

*Beautiful* is that which universally pleases without concept [KANT5c: 104 (5: 219)].

Transcendental interests are *principles of regulation* in the spontaneity of the Organized Being. Now, the transcendental interests taken collectively do not conflict with one another, but this is not to say it is a logical impossibility for *presentations* of the special interests to conflict. In other words, actual conflicts of interest *in concreto* are possible within the domains of particular transcendental interests, i.e. in the diverse representations of understanding, judgment, and speculative Reason. Nonetheless, in a *structure* – a system of self-regulated transformations that preserve the system as a whole – the presentation of conflicts of interest is a disturbance of equilibrium, hence a condition of *Lust per se*. Consequently, to preserve the structure of the system of Nature we must have a *regulation of the second order*, i.e. a regulation of regulations at the service of nothing other than the categorical imperative. The principle of such a regulation is easy to state: to find the common condition under which *all* diverse regulations of interests coalesce in a common ground. Such a condition contains all other regulations of interest under it, hence is the Idea of an *absolute* completeness in the division of a given whole of interest as these interests are presented in consciousness of the state-of-being in the Organized Being. The second cosmological Idea from the judicial Standpoint is: **absolute completeness in a common ground of beliefs in all reflective judgments.**

The presentations of desiration *in concreto* in teleological reflective judgment are presentations of *empirical meanings as transformations of structure* because meanings always at root refer to actions. Presentations in intuition and affective perception, because they must coalesce in a meaning, in this way become the held-to-be-true-and-binding presentations we call beliefs. We can, from this point of view, say that a belief is what coalesces in the Quality of a teleological reflective judgment. Thus we can rightly regard the cosmological Idea of Quality as the Idea of the common ground of belief in all reflective judgments.

The Idea of such a common ground underlies the practical objective validity of the idea of “mainsprings” and that of “motives” in teleological reflective judgment. Although the causality of freedom is vested in determinations of appetitive power as an act, the *orientation of disposition* is

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<sup>7</sup> *Beurtheilungsvermogen.*

a judgment of the expedience of an action regarded as a merely possible appetite, i.e. as a Desire within the manifold of Desires. Mainsprings and motives can only be called causes of action in the *indirect* sense that they are judicially regarded as objects of disposition, which is to say that the condition of their actuality is at the same time regarded as a condition *for* either satisfaction or dissatisfaction. The direct cause of an action is the determined appetite, not the Desire.

### § 3. The Formal Purposiveness of Perfection

There have been a great many factors tied in to the characteristics of teleological reflective judgment thus far in this treatise. We have alternately spoken of these judgments in terms of making a system of Nature, as being judgments of belief, as being judgments of affective perceptions (and therefore entirely without reference *to* objects of cognition), as desirations forming a manifold of Desires, as determinations of possible actions, as judgment according to an Ideal of happiness, and, above all, as judgments of logical formal expedience for the categorical imperative. These diverse characteristics of teleological reflective judgment have so far been discussed piecemeal, and the reader could not be blamed for wondering how all these inhomogeneous characteristics could possibly *all* subsist within the logical essence of *one* process of judgment. The task before us is to synthesize all these considerations into a single process of judgment. The scope of ideas that enters into this synthesis is broad, involving considerations we have been exploring since Chapter 12. The common ground of context for the synthesis is the hypothetical-judicial perspective of the cosmological Ideas of

**Quantity:** absolutely complete equilibrium in judgmentation through suppression or equilibration of interests;

**Quality:** absolute completeness in a common ground of beliefs in all reflective judgments;

**Relation:** the causality of freedom is the absolute beginning of all appearances;

**Modality:** the *I* of transcendental apperception is the unconditioned condition for thinking the *Dasein* of any object.

The logical essence of the process of teleological reflective judgment is that such judgments are forward-looking inasmuch as they are made in the service of a subjective practical result. Yet it is also the character of such judgments that they are affective rather than objective. Objective representations (intuitions) arise as one product of judgmentation in general, but a specific act of teleological reflective judgment occupies a regulative role rather than a constitutive role insofar as objective representations are concerned. We have said that teleological reflective judgment



serves to make a system of Nature grounded in the logical expedience of representations in serving a pure purpose of practical Reason, and the first question we must confront is: What in a merely *affective* presentation in consciousness can stand as an Ideal of judgment through which such a system is *made possible*? In other words, what is the *direct aim* of the process of teleological reflective judgment? An Ideal is a standard or *norm* against which comparison can be made in judgment, and for all judgmentation in general the idea of such an Ideal is that which we call *perfection* (Chapter 10 §4.3). We will begin our job of synthesis with this.

### § 3.1 The Schematism of Aesthetical Perfection

The cosmological Ideas, because they are principles of regulation, are Ideas of schematism in the general processes of judgmentation. In addition, these Ideas are Ideas of absolute completeness in the series of conditions. Thus, as regulations of judgmentation, they are transcendental aims of judgmentation. We encountered this idea of the aim of a schematism earlier in Chapter 10 (§4.3). Our discussion of perfection in Chapter 10 was mainly concerned with *logical* perfection as an aim of understanding. For our present task at hand, we must consider the idea of perfection in relationship to reflective judgment. In that context, this idea is that of *aesthetical* perfection. From Chapter 10 (§4.4) we have the following characterizations of aesthetical perfection:

1. Aesthetical perfection has to do with feelings and the state of the Subject, and how we are affected by Objects;
2. In aesthetical perfection, truth is the *conditio sine qua non* and the first and foremost negative condition; in this Chapter, we have seen that the condition of the possibility of truth is belief, i.e. belief is the *positive* condition of truth;
3. Aesthetical perfection rests on agreement of the Object with the Subject, thus on particular rules of human sensibility.

Given what was just said about the non-objective character of reflective judgment, this third characteristic may initially appear somewhat strange. Here what is to be born in mind is our basic distinction between Object (*Objekt*), object (*Gegenstand*), and thing (*Ding*). Reflective judgment has no direct reference to an object (it is an affective judgment), but it nonetheless always pertains to an Object. Indeed, without reflective judgments no concept of an object is possible in the absence of a copy-of-reality mechanism. Therefore, although reflective judgment is non-objective judgment, it nonetheless pertains to the (aesthetical) perfection of Object judgment because affective perceptions participate in the cycle of thought.

A cognition can be perfect either according to laws of sensibility or according to laws of understanding; in the first case it is *aesthetically* perfect, in the other *logically* perfect. The two,

aesthetical and logical perfection, are thus of different kinds; the former relates to sensibility, the latter to understanding. The logical perfection of cognition rests on its congruence with the Object, hence on *universally valid* laws, and thus likewise suits itself to be judged according to norms *a priori*. Aesthetical perfection subsists in the congruence of cognition with the subject and is grounded on the particular sensibility of man. Hence by aesthetical perfection there occur no objectively and universally valid laws in reference to which we can pass judgment on it *a priori* in a way that is universally valid for all thinking beings in general. So far as there are nonetheless universal laws of sensibility which have validity subjectively for the whole of humanity, although not objectively and for all thinking beings in general, it likewise suits oneself to think of an aesthetical perfection that contains the ground of a subjectively universal satisfaction. This is *beauty*, that which pleases the senses in *intuition* and can be the object of a universal satisfaction just because the laws of intuition are universal laws of sensibility [KANT8a: 547 (9: 36-37)].

Piaget's theory of equilibration holds that the development of thought proceeds through the structuring of higher and better "levels" of equilibration. In considering aesthetical perfection, we inquire into the judicial conditions under which the Organized Being *defines* (for itself through its acts) what constitutes "better" in this structuring.

At this point it is worthwhile to review Kant's seven degrees of knowledge, which we introduced in Chapter 10 (§4.4). From the judicial Standpoint, the proper level at which to view aesthetical perfection is at Kant's third (*noscere, kennen*) and fourth (*cognoscere, erkennen*) degrees of knowledge. These are levels of beginning objective awareness (intuition formation) and object awareness (cognition in a concept of the object). These are the appropriate degrees at which to discuss aesthetical perfection because the marking out of an intuition falls as a task to reflective judgment, even though reflective judgment judges in terms of affective perceptions.

We have one logic that makes and can make our cognizance logically perfect, and another that makes and can make our cognizance aesthetically perfect. The former teaches us to make representations that are suitable for the properties of the *Sache*-thing<sup>1</sup> . . . The latter however, which contains aesthetics, must deal with those representations that have effect on our feeling [KANT8a: 31 (24: 44)].

Because aesthetical perfection can only be properly dealt with from the judicial Standpoint, and because affective perceptions, as conscious representations, deal with Self-knowledge but only at the subjective level, the overall *Gestalt* of perception with which we must deal is neither cognition proper (concepts plus intuition) nor feelings as such. Rather, it is a melding of intuition and feeling in a unity of presentation that should properly be called cognizance (*Kenntnis*). Kant draws this distinction in what he called an "aesthetical cognition":

We have already talked first of the aesthetical perfection of a cognition and have said that it subsists in the effect on our feeling. From here we easily gather what an aesthetical cognition is, namely one that may have affected our feeling (through *Lust* or *Unlust*) [KANT8a: 34 (24: 48)].

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<sup>1</sup> Kant, of course, simply used '*Sache*' in his lecture. *Sache* means "thing" but in the context for which we have previously coined the term *Sache*-thing.

In this judicial context the word “cognition” takes on a distinction from our use of that term in the theoretical Standpoint (where it means an intuition with a corresponding concept) because it is referenced to feeling rather than to knowledge of an object.

An aesthetical perfection is a perfection according to the laws of sensibility. One makes something sensuous when one makes the Object awaken and stir a sensation, and when I make something fit for intuition [KANT8a: 32 (24: 45)].

Aesthetical perfection is the subjective congruence of understanding with sensibility – which the representation of an object enlivens. Because the congruence is only subjective, so also will it be possible only through sensation. Feeling of *Lust* ensues from this, just as feeling of *Unlust* ensues by sensation of opposition [KANT8a: 443 (24: 705)].

We can note here the *active character* of the *making* of a cognition of an Object in this description. Aesthetical cognition is of a very *personal* nature to the Organized Being since it goes to the very heart of the patiency of *nous*. In all discussions of aesthetical perfection “cognition” means *aesthetical* cognition and references cognizance in consciousness rather than merely cognition of an appearance alone. The scope of the idea of aesthetical cognition is greater than that of theoretical cognition because the former includes the latter.

Kant tells us that combination under the four titles (Quantity, Quality, etc.) of aesthetical perfection is summarized in brief as follows.

- 1) *aesthetical generality*. This subsists in the practicability of a cognition for a great many Objects that serve as examples to which its application gets made, and whereby at the same time it becomes useful for the purpose of popularity;
- 2) *aesthetical distinctness*. This is distinctness in intuition wherein an idea abstractly thought of is presented or elucidated *in concreto* through examples;
- 3) *aesthetical truth*. A merely subjective truth which subsists only in congruence of the cognition with the subject and the laws of sense-semblance, and is consequently nothing more than a general semblance;
- 4) *aesthetical certainty*. This rests on what is necessary in consequence of the testimony of sense, i.e. what is endorsed through sensation and experience [KANT8a: 549 (9: 39)].

With regard to Quantity, Kant comments in his lectures that aesthetical generality refers to the suitability of an aesthetical cognition for the *sensus communis* (common sense) of aesthetical reflective judgments of taste [KANT8a: 269 (24:810)]. We touched upon communicability of feelings by means of objective examples earlier in this treatise, and this is what Kant is getting at when he says aesthetical generality in perfection is useful “for the purpose of popularity.” To communicate our sense of “the beauty” of something to another person requires the ability to translate a feeling, which has an autistic character, into a communicable representation in an object to serve as an example. In the third Critique he remarks,

One could represent taste by *sensus communis aestheticus*, common human understanding by *sensus communis logicus* [KANT5c: 175fn (5: 295fn)].

As he makes clear in *Critique of Judgment*, aesthetical *perfection* does not belong to the power of making *aesthetical* reflective judgments because it is bound up with logical formal expedience and not with subjective formal expedience. He does, however, state that teleological reflective judgment “looks upon the perfection of a thing according to an end that lies in itself” [KANT5c: 49 (20: 250)]. Affective perceptions do not become part of the representation of an object, but a unity of affective perception and objective cognition is found in the conscious presentation of the Object (see the discussion in §4.1 of Chapter 9). This is the sort of thing a scientist tries to describe when he speaks of a theory as being “beautiful.” A “beautiful theory” explains a great many phenomena with a comparatively brief set of principles, and this is the sort of thing Kant describes above as the aesthetical generality of perfection.

The Quality of aesthetical perfection can be described in terms of the degree to which something is, so to speak, brought into a sharp focus. For example, exceptionally good poets and storytellers are able to convey to their readers a vivid image in a brief line, e.g.

Dawn in her saffron robe came spreading light on all the world [*The Iliad*, Bk 8, line 1].

To me this is a perfect metaphor describing the early summer sunrise in the peaceful quiet of the new day as the sky is set aglow over the mountain and fields behind my house. There is not one word in this quote that describes dawn in physical terms, yet in my mind’s eye I see perfectly well the phenomenon it describes, and if I reflect upon it I can also summon up many of the same feelings I experience when I watch the dawning of such a day. Sometimes I can even imagine the taste of the cream in my coffee. Kant called aesthetical distinctness a portrayal

when through illustrations I arrange the rules of concepts [KANT8a: 269 (24: 810)].

Concepts, remember, are nothing other than rules for the reproduction (and for the production) of intuitions. Teleological reflective judgment establishes the targets of concepts when it makes rulings on the logical expedience of representation in sensibility.

Kant called Relation in aesthetical perfection “subjective truth.” In the view of some philosophers the idea of “subjective truth” is a contradiction in terms, and so it would be if this title of perfection had to do with the *logical* perfection of objective knowledge. But this is not the context here. Rather,

This is congruence of knowledge with the subject’s mode of thinking. Appearances of ghosts, etc., are aesthetically true. The sun, etc., has aesthetical truth; logical truth is not at all demanded here. The poet needs only aesthetical truth, how it meets with our senses and seems to be. The sun sinks into the water, says the poet. If he were to say that the earth turns on its axis, then he would assimilate to logical truth and not be a poet [KANT8a: 269 (24: 810)].

Logical truth, in the cognition of an object, is required for holding-to-be-true, but judicial belief requires only subjective congruence in the presentation of sensibility. Perfect aesthetical truth is *complete* congruence in sensibility.

Aesthetical certainty in teleological reflective judgments is the distinguishing mark of the uncritical character of belief and is what marks belief in judgmentation. Kant remarked that subjective necessity and certainty is *habit* in experience from confirmation by the senses [*ibid.*]. Aesthetical perfection in Relation stands behind holding-to-be-true, but aesthetical perfection in Modality *is* holding-to-be-binding. Modality in judgment we have described as a judgment of judgment, and aesthetical certainty in effect says of a conscious presentation, “this is how it *all* ought to be.” It is the glue holding together the manifold of the system of Nature in judgments of formal logical expedience. Aesthetical certainty binds and marks a *state* of belief, aesthetical truth marks the form of this binding.

### § 3.2 The Transcendental Topic of Aesthetical Perfection

In Chapter 14 (§2.2) it was remarked that the *Verstandes Actus* of reflexion is the act of determining the transcendental place<sup>2</sup> of a representation. It was further remarked that the reason the *momenta* of Quality in aesthetical reflective judgment carry no expression of transcendental place is because this Idea subsists in aesthetical perfection. Yet we know that a reflective judgment is needed in order to make a presentation of perception, that such a presentation in *intuition* involves reflexion in the three-fold synthesis of apprehension, and from this it follows that the *judicial* counterpart to reflexion must contain an act of judgment for this determination (i.e. a judgment of transcendental topic). The synthesis of apprehension as a process does not judge. If this necessary act of judgment is not found within the rules of aesthetical reflective judgment, then it must be sought in teleological reflective judgment as an act in which subsists the *orientation* of sensible representation as an alignment of transcendental topic. *Analytically*,

The transcendental topic . . . contains nothing more than the cited four titles of all comparison [*Vergleichung*] and distinction<sup>3</sup>, which are distinguished from the categories for the reason that what is exhibited through them is not the object according to what makes up its constitution (magnitude, reality), but rather only the comparison of representations in all their manifoldness, which precedes the concepts of things. This comparison, however, first requires a reflexion, i.e. a determination of

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<sup>2</sup> Transcendental place is the idea of the “position” assigned to a representation as arising from sensibility in receptivity or from understanding in spontaneity. The idea of determining transcendental place is what Kant called transcendental topic.

<sup>3</sup> I.e.: identification and differentiation; agreement and opposition; the internal and the external; the determinable and the determination. See the 2LAR of representation in general. With regard to transcendental place, these are the ideas of its analysis. Its *judgment* calls upon the synthesis of these ideas.

the place where the representations of things that are compared belong, thus of whether they are thought by pure understanding or given by sensibility [KANT1a: 371 (B: 325)].

The determination of transcendental place goes to the establishment of meanings in the representations of sensibility, with only those representations capable of presenting meaningfully being fit for presentation in perception. On the rational grounds stated above, determination of transcendental place necessarily precedes concept formation in cognition. It is furthermore self-evident from one's own experience that our process of perception does not contain a pause or break wherein we are conscious of making this determination; our first consciousness of an intuition or a feeling comes to us with this determination already in place. In logical order, this consciousness is comprised, firstly, of the making of a *distinct* presentation, and, secondly, in the refinement of sensibility, in making a *re-presentation* more distinct.

The ground for objective validity in the Idea of transcendental topic in the determination of transcendental place is and can be nothing else than expression of *practical meanings made to inhere* in sensible presentations. Only through this can we speak of sensible presentations as being *representations*, whether as an appearance in cognition or as a feeling of *Lust per se*. From such a ground we can easily see that the objective validity of a determination of transcendental topic is a practical objective validity, and this ties such a determination to actions. The *act* of reflective judgment in making such a determination is an act of general orientation for *acting in the particular*, and thus comes under the transcendental acroam of the *Lust* principle (Chapter 15, §7.5).

How are we to understand such an act of judgment? The three-fold synthesis of the *Verstandes Actus* can be relied upon to sort out by itself the matter of sensibility once *given* a judicial orientation for its representing act. The act of reflective judgment in this is not concerned with the particular feeling or intuition proceeding out of this synthesis through the aesthetical Idea. Rather, its concern is with formal expedience. We quoted Kant in Chapter 15 (§7.5) as saying that *practical* perfection subsists in the fitness or adequacy of a thing for all sorts of purposes. *Judgment* of such fitness or adequacy is nothing else than a judgment of formal expedience insofar as this judgment acts for the sake of *aesthetical* perfection. Such a judgment is teleological, and, viewed as a rule of transformation in the structure of the *Existenz* of an Organized Being, *expresses* through the *Lust*-organization of *psyche* and *impresses* through pure practical Reason. As an act, the *synthesis* in determination of transcendental place is represented in our general 2LAR as an act of {integration, subcontrarity, the transitive, the determining factor}.

Upon this synthesis in the determination of transcendental place hangs the orientation of

Reason and the form of expression (in actions) of acts of judgmentation. Imagine if you will that there is a machine (a robot) capable of representing to itself an image of itself standing in the rain; let us further suppose that this machine is such that it “knows” getting wet is not good for it. Let us further suppose that this machine is so constituted that it will always take steps to remove itself from any situation judged not-good-for-it. What will this machine do in response to forming the image? If this machine possesses no capacity for determining transcendental place *it would be unable to distinguish between the situation where it is actually standing in the rain right now vs. the mere memory of once having actually been standing in the rain*. Assuming that building such a machine could be possible, it would be a bad design choice to build a machine capable of both sensory “perception” (representation of sensor data) and “problematical imagination” but without the ability to distinguish in its representations the difference between these two manners of representation. Such a machine, were it able to do so, might open an umbrella in the house merely because it presented to itself the image of a memory of standing in the rain.

It is the ability to distinguish between two cases such as in this contrived example that we mean by “determination of transcendental place in a representation.” This determination goes to the appropriateness of possible activities, i.e. to “appropriate behavior” in regard to sensibility. Put another way, *expedience in a representation of judgmentation is grounded in the determination of transcendental place*. We have encountered this consideration before (in Chapter 3 §4.2) when we discussed the *Verstandes Actus* of reflexion in the three-fold synthesis in sensibility. Then we were concerned mainly with the synthesis of intuitions, but here we see that the act of reflexion also has its tie to teleological reflective judgment inasmuch as this act is necessary for the possibility of desiration in reflective judgments.

How are we to understand the logical essence of this tie between the act of reflexion in sensibility and the judgment of formal expedience in teleological reflective judgment? Here the crucial fact is that sensibility does not judge whereas teleological reflective judgment does not synthesize objective perceptions. Yet, when the acts of these two capacities for knowledge are conjoined, both objective perception and an empirical *meaning* for this perception result. When we look for where the point of contact between these two powers of knowledge is possible, we find it where at first encounter it seems wondrously surprising: the pure intuition of *space*.

This connection was discussed at some length in Chapter 17 and more will be said of it soon. For the moment it is enough to say that the *Gestaltung* of empirical intuition takes its formation through motoregulatory expressions – e.g. movements of eye muscles, modulatory chemical signaling from brain stem nuclei that excite sensory and motor cortices, and numerous other mechanisms (when the Organized Being is viewed in terms of *soma*). Of the multitude of possible

topological representations in the synthesis of the *Verstandes Actus*, reflective judgment marks out the representations that will come to consciousness, and does so according to a standard of formal expedience. It is in this primitive *commercium* of receptivity and spontaneity through motor actions where we look to find the fundamental basis for the possibility of the development of logic in understanding, of the Logic of meanings, and, in that part of the representations of sensibility that come to consciousness as affective perceptions, the foundation of motivations and the “energetics” of actions. Reflexion, working up the sensational *materia* of sensibility, provides presentations of possible transcendental topic (determinables), but it is teleological reflective judgment that makes the determination for *consciousness* of the transcendental topic of sensibility (apperception *in conjunctio* with the judicial Idea) and for the *designation* of meanings (apperception *in conjunctio* with continuity in transcendental Meaning).

The determination of transcendental topic places the Object in regard to what we can call the “mind set” of the Organized Being. Recall that the term “Object” denotes the complete whole in the understanding of something, taking in all its representations of cognition and all meaning implications of that something. An Object is that which admits no contradictory opposite, and it is always a *noumenon*. The *phenomena of an Object* are its objects, and for an object there can be a contradictory opposite object. These objects are jointly understood by concepts as members of a disjunction under the idea of the Object and are distinguishable through the meaning implications vested in each. To make this a bit less abstract, let us look at the standing-in-the-rain example.

In the first experience of standing-in-the-rain, the concept of this accident of *Existenz* will represent the sensational character of the experience by the category of *reality* in Quality. The *recall* of standing-in-the-rain as the memory of a past event is an act in which this concept is summoned back into the synthesis of apprehension. However, in the formation of the new intuition (which contains in its *materia in qua* contributions from this concept), that which is contributed to the intuition by the reproduction in imagination of the standing-in-the-rain concept must emerge from the synthesis of re-cognition in imagination with a different “shading” of the notion of reality, i.e. *with a different meaning implication*. The distinction, loosely speaking, is that between “I *am* standing-in-the-rain” vs. “I *was* standing-in-the-rain.” However, the categories of understanding contain no notion of objective time, and so if such a distinction is to be possible in understanding (and, of course, such distinctions are routinely made by each of us) then there must be something in the act of judgmentation that makes this distinguishability possible whilst preserving a combination in context with the concept of the standing-in-the-rain Object. We can call this “shading of the notion of reality” the *context in meaning implication*.

The possibility of such a context does not lie with determining judgment. The process of



determining judgment knows *a priori* only the notions of the categories (and these only as rules for the construction of concepts). The possibility of this context must instead be looked for in the systematic construction of the manifold in Nature, and this construction falls to teleological reflective judgment and is *made* possible by meaning implications. In terms of determination of the transcendental place, we would better phrase the previous distinction as “I am me-standing-in-the-rain” vs. “I am me-remembering-me-standing-in-the-rain” (a distinction that makes more clear the role of the meaning implication attaching to the intuition).

We could wish Kant had devoted more space to his explanation of transcendental place and transcendental topic. Unfortunately, he was over-brief in his treatment of this in *Critique of Pure Reason* [KANT1a: 366-377 (B: 316-336)] and it is left up to us to put more flesh on the bones. In the *Critique* Kant addresses transcendental place and topic from the theoretical Standpoint; what we require is its treatment in the judicial Standpoint.

### Sameness and Difference

A general idea of an Object subsumes under it many concepts of objects among which there are *real differences* even when each of these objects has *the same* representation in a concept of “the object *qua* object.” This is typical of a concept of a class of things (e.g. ‘drop-of-water’). Quantity in transcendental topic goes to the ability to distinguish the meaning between the concept of a class of objects and the objects that are the members of this class, and between one and another of these objects.

If an object is presented to us repeatedly, but always with the very same inner determinations (*qualitas et quantitas*), then it is exactly the same if it counts as an object of pure understanding, not many but only one thing (*numerica identitas*); but if it is appearance, then the issue is not the comparison of concepts, however much the same everything is in regard to that, but, rather, the difference of the places of these appearances at the same time is still an adequate ground for the *numerical difference* of the object (of the senses) itself. Thus, in the case of two drops of water one can completely abstract from all inner difference (of Quality and Quantity), and it is enough that they be intuited in different places at the same time in order for them to be held to be numerically different [KANT1a: 368 (B: 319)].

Identical twins are common enough that I think it likely most of us probably know at least one pair. If, however, one has not seen them together but only met each separately, this can be a source of quite a degree of misunderstanding or confusion that is cleared up only after one learns that the person he’s seeing right now has a twin. Twins are rare enough that most of us learn to notice the subtle differences in their appearances only after we realize that there is a need to be able to distinguish them, and, owing to syncretism in perception, often we cannot mark these distinctions unless we see them together. Kant’s point is that it is the *Gestaltung* in pure intuition

(space) which provides the *real* grounds for making determinations of sameness and difference. But the categories do not contain any pure notion of space, and thus this numerical distinguishability is founded upon not only the topological synthesis of the pure intuition of space but also on the reflective judgment that marks one such form out of the many that are possible<sup>4</sup> as *the* intuition of appearance at a particular moment in time. But this act of judgment falls under the principle of formal expedience and therefore the distinction so marked requires in the act of judgment a meaning implication. Integration of sameness and difference in the synthesis of determination of transcendental topic is what promotes aesthetic generality (aesthetical perfection in appearances), by which cognition in one concept can be put to use in understanding many Objects.<sup>5</sup> One can say the synthesis makes the Objects “the same but different.”

Now, the idea of a meaning implication is a function by which a mere presentation is made representative, and the *orientation* to aesthetical generality in the synthesis of Quantity in transcendental topic just described is a keystone in the teleological function. This orientation has the purposive character we denote by the word “intent.” In Chapter 14 (§3.2) we quoted Santayana’s remark, “Intent is action in the sphere of thought.” The *matter* of intent subsists in the feeling of subjective expedience, but the *form* of intent must be seen as *nexus* in the Modality of reflective judgments. Modality, as matter of form, pertains to *composition* in *teleological* reflective judgment (see figure 16.6.1), and the idea of the structuring of intent in a meaning implication, the formal expedience of which is a *logical* expedience, pertains to Quantity in this composition. We repeat here what we quoted from Santayana’s *Reason in Science* earlier:

What renders the image cognitive is the intent that projects it and deposes it to be representative. It is cognitive only in use, when it is the vehicle of an assurance which may be right or wrong, because it takes something ulterior for its standard.

This “ulterior standard” is the drive to aesthetical perfection and, as we said above, aesthetical generality pertains to the scope to which conscious representations can be applied. If, as we say, the affective perceptions in aesthetical reflective judgment constitute energetics, those in teleological reflective judgment pertain to the points of application for these energetics in the

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<sup>4</sup> see Chapter 17. For our discussion here it is important to keep in mind that the *Gestaltung* (formation) of spatial form in the topological synthesis of space uses kinaesthetic feedback of motoregulatory expression as *materia circa quam* for making the empirical intuition.

<sup>5</sup> Consider two identical twin brothers, Tim and Tom. Each, as a human being, must be regarded as an Object in his own self. Yet many concepts of appearance apply to each of them (or they would not be called identical twins). Aesthetical difference “gives place” for the concept of each as Object, aesthetical sameness gives rise to object concepts shared by the two Objects. Integration in judgmentation sees to it that there is no contradiction in this structuring of Nature despite the *Existenz* of contraries in their representations. Meaning implications in structuring Nature prevent contraries from being conceptualized as contradictories.

synthesis of experience, especially to Quantity in the characteristics of experience, which is *intentionally* systematic, organized, and contextual.

### Agreement and Opposition

Contradiction is possible in mere formal logic, but in the transcendental logic of appearances we can have real contraries but not real contradictions. Transcendental logic is a logic of meanings, ergo a Logic of judgmentation in general. To be in contradiction and to be contrary are both ideas that carry a connotation of being in opposition in one way or another, and this brings us to another of the subtle splitting of technical hairs for which Kant is justly famous (or, in the minds of some philosophers, infamous). In ontological contexts Kant used three terms that all translate into English as “opposition”: *Widerstreit*, *Entgegensetzung*, and *Opposition*. The word “opposition” in the title of this subsection corresponds to *Widerstreit*, as does “opposition” in our 2LAR of general representation. The task in this subsection is to explain opposition in the context of transcendental topic (*Widerstreit*), but along the way we will find ourselves also having to deal with the other two terms.

Of these three, Kant uses *Opposition* as the higher term (opposition-in-general) with the other two terms standing under it as specialized manners of opposition. Of *Opposition* he says

When two concepts are opposed . . . then they always stand under a higher concept – for opposition always presents a disjunctive proposition [KANT19: 165 (29: 811)].

Where Kant says an Object admits of no opposite<sup>6</sup> he is speaking in terms of there being nothing in *Opposition* to that Object. But does he mean this in the sense of *Entgegensetzung*, *Widerstreit*, or both, or does it mean something else? To answer this we must know the connotation and possible contexts of these latter two terms.

Opposition in the sense of *Widerstreit* carries the connotation of a conflict (and “conflict” is one proper translation, depending on context, for *Widerstreit*). Kant uses this word in contexts that are transcendental and concern the Quality of an object (most often this object being an effect in a relationship). The concept of *Widerstreit* contains the notion of the category of negation, which Kant symbolizes by “=0” in his writings. Thus, opposition in the sense of *Widerstreit*

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<sup>6</sup> In *Metaphysik L<sub>2</sub>* [KANT19: 310 (28: 543)]. The word Kant actually used was the Latin *oppositum*. In some contexts this term equates to another German noun, *Gegenteil*, which is “the opposite” in the sense of being the contrary of or converse of or reverse of. This is a correct rendering in the contexts where this linkage appears in Kant’s work (e.g. [KANT19: 323 (28: 558)]) because this is one Latin usage of *oppositum*, but in [AK28: 543] the context of the discussion is not dealing with the contrary but rather with the contradictory.

implies transcendental negation in Quality where two real grounds reciprocally cancel one another's effects.

For real opposition [*reale Widerstreit*] is everywhere met where  $A - B = 0$ , i.e. where one reality combined with another in one subject cancels out the effect of the other, which is unceasingly placed before our eyes by all hindrances and countereffects in nature that nonetheless, since they rest on powers, must be called *realitates phaenomena*<sup>7</sup> [KANT1a: 373 (B: 329)].

Opposition in the sense of *Entgegensetzung* differs from *Widerstreit* in that *Entgegensetzung* is used to denote *the presence of Opposition in a Relation of community* (when used to describe objects) or to denote contradictory predicates (when used in the context of formal logic). The former has real context, the latter merely formal (logical) context. When *Entgegensetzung* is used in a real context (i.e., the context of objects) it denotes contraries but not contradictories. We can perhaps best describe the relationship between *Entgegensetzung* and *Widerstreit* by saying that the former denotes Relation of two (or more) causes, the latter a reciprocal effect.

We are now in a position to understand the statement that an Object admits of no opposite. An Object cannot be an "irrepresentable negative nothing" (*nihil negativum irrepraesentabile*). This means that in the *inner* determinations of an Object there can be no logical *Entgegensetzung* predicated of it, nor any real *Entgegensetzung* productive of a *Widerstreit* attaching to its *Dasein*. This places restrictions on the combinations possible in the manifold of concepts of the Object.

These restrictions speak to the character of real oppositions (in the *Entgegensetzung* sense) permissible in the making of the manifold of concepts of an Object. Kant discusses *Entgegensetzung* in detail in his 1763 essay, *Attempt to introduce the concept of negative magnitudes into philosophy* [KANT21: 203-241 (2: 165-204)]. In the following quotes *Entgegensetzung* is rendered as "opposition" and *Opposition* is left in the German.

'Opposed to one another' is about what the one cancels which is established through the other. This opposition is twofold: either *logical* through contradiction, or *real*, i.e. without contradiction.

The first *Opposition*, namely logical, is that upon which one so far has purely and simply concentrated attention. It subsists in that something is simultaneously affirmed and denied of the very same thing. The consequence of this logical conjunction is *nothing at all* (*nihil negativum irrepraesentabile*<sup>8</sup>), as the law of contradiction asserts. A body in motion is something; a body which is not in motion is also something (*cogitabile*<sup>9</sup>); but a body which is both in motion and also, in the very same sense, not in motion is nothing at all.

The second *Opposition*, namely real, is that where two predicates of a thing are opposed but not through the law of contradiction. Here, too, one cancels that which is established through the other but the consequence is *something* (*cogitabile*). Moving power of a body in one direction and an equal tendency of the same in the opposing direction do not contradict one another, and as predicates are possible at the same time in one body. The consequence from it is rest, which is

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<sup>7</sup> phenomenal realities.

<sup>8</sup> an irrepresentable negative nothing.

<sup>9</sup> conceivable.

something (*repraesentabile*<sup>10</sup>). It is nonetheless a genuine opposition. For what is established by the one tendency, when it is on its own, is cancelled by the other, and the two tendencies are genuine predicates of one and the self-same thing, and they belong to it at the same time. The consequence from it is also nothing, but in another sense to that in which it occurs in a contradiction (*nihil privativum*<sup>11</sup>, *repraesentabile*). We shall in future call this nothing zero = 0, and its meaning is the same as that of negation (*negatio*<sup>12</sup>), lack, absence [KANT21: 211 (2: 171-172)].

Here Kant makes it clear that opposition in the *Entgegensetzung* sense takes its reference from a Relation of community. That is, it is an idea vested in a reciprocal determination since it makes no difference at all which “predicate” is said to have its effect cancelled and which is said to do the canceling. That real opposition in this sense is not merely the object of a concept but, rather, the object of an idea (therefore supersensible) can be seen from his characterization of the *effect* as a “nothing” – a privation of effect. Real opposition in the *Entgegensetzung* sense implies a peculiar sort of *Unsache*-thing. Its effect (cancellation as negation) viewed as an object has that Quality denoted by *Widerstreit* (cancellation through conflict of the *Kraft* of each substance predicated to be opposing one another). However, since the effect, this =0 of negation, is *nihil privativum* rather than *nihil negativum*, its Modality is that of *Dasein* (“being” = actuality) whereas the Modality of *nihil negativum* is *Nichtsein* = non-being. (Let two people pull on your arms with equal force in opposite directions; I leave it to you to decide if the ‘lack of motion’ that results has no existence of any kind or if this lack really is ‘something’).

It is from this basic starting point that Kant goes on to discuss the ontological *Realerklärung* of the idea of “negative magnitudes.” We recall that a magnitude is a unity that contains a multiplicity. The idea that somehow magnitudes can be combined to produce a new magnitude in the result of that combination, and that this result can be a negation, leads him to the insight that the idea of “positive” and “negative” magnitudes must likewise take the basis of their real explanations only from a context of reciprocal determination. In other words, a magnitude A and a magnitude B can only be said to be positive *relative to one another* if the Relation between that which is said to have magnitude A and that said to have magnitude B is not one of opposition. This combination of magnitudes is what in mathematics is symbolized by addition, i.e. A + B. In similar fashion, a negative magnitude is negative only with respect to another magnitude by virtue of a reciprocal Relation of opposition. This, Kant tells us, is what in mathematics is represented by the notation of subtraction, i.e. A – B. A magnitude in isolation is neither “positive” nor “negative” because such a designation has no real meaning except in reciprocal relationship to another magnitude.

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<sup>10</sup> representable.

<sup>11</sup> a nothing of privation.

<sup>12</sup> negating.

Mathematics has long taken notice of this idea, and it is reflected in the arithmetical idea of an “additive inverse.” As a simple yet not trivial example, consider the mathematical group made up of the set of numbers  $\{0, 1, 2, 3\}$  and the operation “addition modulo 4.” This operation is defined by normal addition followed by division by 4. The result is the *remainder* of this division. Thus,  $1 + 2 = 3$  since  $3 \div 4$  has a quotient of zero and a remainder of 3. However,  $1 + 3 = 0$  under this operation since  $4 \div 4$  divides evenly with 0 as a remainder. The number 0 is known as the “additive identity element” of the group, and the additive inverse of a number A is the number B for which the result  $A + B = 0$  is obtained. Thus, 3 is the additive inverse of 1 (denoted in mathematical notation as “-1”); likewise, 1 is the additive inverse of 3 (denoted by “-3”). In this group, 2 is its own additive inverse ( $2 + 2 = 0$ ) and so we can write either “2” or “-2” with equal validity. (Note that  $3 + 2 = 1$  in this group, and we can equally write this as  $3 - 2 = 1$ ).

Modern arithmetic, including the arithmetic we use every day, is built on this simple idea (plus, of course, a few more ideas that introduce things like multiplication). We can say from this that subtraction is nothing else than the mathematical version of opposition. What then would we say of addition? In addition we do not see cancellation in the result; addition is thus the opposite of opposition, i.e. it has the Quality of *agreement* in our 2LAR of representation in general.

Kant then proposed what we will call the **first rule of real opposition**:

By this real opposition the following law as a **fundamental rule** is to be noted. Real repugnance is found only in so far as for two things, as *positive grounds*, one cancels the consequence of the other. Suppose moving power be a positive ground; a real *Widerstreit* can be found only insofar as another moving power is connected with it such that the consequence is reciprocally cancelled. The following may serve as the general proof. One and another conflicting determinations must *firstly* be met with in the very same subject. For supposing that there is one determination in one thing and another, whatever it may be, in another, in this way no actual opposition arises. *Secondly*, one of the opposing determinations cannot be the contradictory opposite [*Gegentheil*]<sup>13</sup> of the other; for if it were the *Widerstreit* would be logical and, as we proved above, impossible. *Thirdly*, a determination cannot negate something other than what is established through the other; for otherwise there could be no opposition at all. *Fourthly*, insofar as they conflict with one another, they cannot both be negative, for, if they were, through neither is something established which through the other is canceled. Accordingly, in every real opposition the predicates must both be positive in such a way that in connection each reciprocally cancels the consequence of the other in the same subject [KANT21: 215-216 (2: 175-176)].

Although real opposition (*Realentgegensetzung*) has objective validity only in the context of reciprocal Relations, the first rule of real opposition nonetheless has an interesting and important implication for the *succession* of appearances in time when it comes to examining changes in the degree of intensive magnitude in perception. To see what this implication is, we need Kant’s **second rule of real opposition**:

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<sup>13</sup> opposite in the sense of being the reverse of or the converse of the other predication.

The **second rule**, which is really the reverse of the first, runs thus: Everywhere where there is a positive ground and the consequence is nonetheless zero, there is a real opposition, i.e. this ground is in connection with another positive ground which is the negative of the first. . . In the general sense this is as much to say: that the cancellation of the consequence of a positive ground always demands a positive ground as well. Suppose there is a positive ground for a consequence  $b$ ; then the consequence can never be 0 except in so far as there is a ground for  $-b$ , i.e. there is something genuinely positive which opposes the first:  $b - b = 0$  [KANT21: 217 (2: 177)].

This second rule is indeed a theorem in classical mechanics, where an applied force, which is the ground for an acceleration, must be counteracted by an opposing force if zero acceleration is actually observed. Kant, however, saw something of deeper consequence in his rules of real opposition. Although he wrote this essay prior to his “Copernican revolution” that led to the Critical Philosophy, he was able to retain his rules of opposition even afterward by realizing that they applied to appearances rather than to things regarded as they are in themselves. Indeed, the rules are implicit in his *Metaphysical Foundations of Natural Science*. However, they extend well beyond their mere application to physics.

We will take an example from psychology. The question is this: whether *Unlust* is simply the lack of *Lust* or a ground for deprivation of the same, and as such is itself that which is positive and not merely the contradictory opposite [*Gegentheil*] of *Lust*, but is opposed to *Lust* in the real sense, and thus whether *Unlust* can be called a negative *Lust*. Now right at the outset inner sensation teaches that *Unlust* is more than a mere negation. For whatever *Lust* one may have, for all that there will always be lacking some possible *Lust* so long as we are limited beings. . . Here is not a mere lack of *Lust* but rather something which is a genuine ground of feeling, which one calls *Unlust* [KANT21: 219 (2: 180)].

Kant’s argument to this point is open to counterargument, and he knows this. Merely not feeling a *Lust* of one sort, while feeling one of another sort, does not by itself establish *Unlust* as something positive. James would probably criticize the examples Kant used in this pre-Critical essay as presenting a picture of man as possessing some store of “atomic” feelings of *Lust* and *Unlust* that cannot be justified on any solid grounds of evidence. I am inclined to think James would get the best of such an argument.<sup>14</sup>

However, once the Copernican hypothesis is in place along with the law of equilibration and our understanding of *Lust per se* as the *Kraft* of adaptive *psyche*, we can do better than Kant’s 1763 exposition. We already have it that *Lust* is a ground for acting in the particular. Consider an Organized Being so acting from the feeling of *Lust*. The law of the categorical imperative tells us that its acts and actions are aimed at the establishment of equilibrium, and we have seen that equilibrium is a cycle in which the intensive magnitude of *Lust per se* is negated. The question is:

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<sup>14</sup> Kant himself pointed out in his essay that he was not claiming to have presented a final solution and proof, but rather that he was making an experiment that could pose the question in a way to suggest further theorizing and testing.

Do we regard this *Lust* as simply vanishing of its own accord, or must the feeling of *Lust* be opposed by a feeling of *Unlust* that in connection with the feeling of *Lust* produces the *Widerstreit* needed to extinguish the feeling of *Lust per se*?

This question is best addressed scientifically by looking at representation on the side of *soma*. Any representation of accidents of *Lust* must have in its somatic correspondent a representation in some complex of brain activity linked to motoregulatory expression via the brain's motor (and some other) regions. Concluding the action, whatever it may be, requires that this signaling complex, whatever it may be, give way to some other cycle of brain activity. Furthermore, physical causality demands that such a change be brought about by the arousal of other signaling activities that produce this change. It is easy to see here elements of James' theory of "conflicting impulses" in the neural pathways. These inhibiting "extinguishing signals" in somatic representation are, by definition, in real opposition to the original signaling complex, and therefore are to be regarded as the representation of an actual opposing ground. Regarded in terms of magnitudes, the first and the second representations would be negatives of one another.

But now there enters into this argument the principle of emergent properties, which says that to these somatic representations there correspond noetic counterparts. Calling the original representation an expression of *Lust*, the opposing representation would then be called an expression of *Unlust*. From this it is to be concluded that, as a ground, *Unlust* is *in deed* a magnitude in real opposition to *Lust*. In the negation of *Lust per se*, satisfaction of *Lust* is brought forth through arousal of an *Unlust*, and vice versa. We can thus view a state of equilibrium as a state in which the influences of *Lust* and *Unlust* are in balance to produce a real negation (the Quality of *Widerstreit*) of the feeling of *Lust per se*. The Critical argument confirms Kant's pre-Critical 1763 conclusion:

*Unlust* is accordingly not merely a lack of *Lust* but rather a positive ground, that wholly or in part cancels the *Lust*, which arises from another ground, and I call this a *negative Lust*. The lack of both *Lust* and *Unlust*, in so far as it arises from the absence of their respective grounds, is called *indifference (indifferentia)*. The lack of both *Lust* and *Unlust*, in so far as it is a consequence of the real opposition of equal grounds, is called *equilibrium (aequilibrium)*. Both indifference and equilibrium are zero, though the former is a negation absolutely, whereas the latter is a deprivation. The state of mind in which *Lust* and *Unlust* are unequally opposed so that there is something left over from one of these two sensations is the *preponderance of Lust or Unlust* [KANT21: 220 (2: 181)].

Kant presents us with some other examples of real opposition as well. The Aristotelian idea of passing-away is a negative coming-to-be; abstraction is negative attentiveness; detestation is a negative appetite. The giving-way of one representation in our thinking about one thing as we turn our attention to something else is the product of the arousal of real opposition in sensibility.



Kant remarked,

What an admirably worthy industry is concealed in the depths of our minds, which we do not notice in the execution for the reason that the acts are very many, but each of them is represented only very obscurely [KANT21: 229 (2: 191)].

Not bringing something into sensibility is merely inaction (a lack); but abstracting away something already in sensibility requires an act. Something must be put to sensibility in a real opposition to that which is removed from presentation. In somatic terms, this picture is consistent with James' idea of opposing impulses; Damasio's hypothesis of dispositional representations is also compatible with this picture if we include in the idea of dispositional representations the possibility for some pairs of such representations to mutually inhibit one another.

Now, what has all this discussion to do with aesthetical perfection? These ideas enter in to that discussion by way of their connection to distinctness and clarity in sensibility. Likewise, with regard to the manifold of concepts (logical perfection), *Opposition* implies disjunction (Relation of community) in the manifold, the sphere of the opposing concept entering into combination with that of the concept it opposes through the Quality of negation (*Widerstreit*). Before a concept can be made *contextually distinct* there must first be an inference of an opposing concept, i.e. the judgment of a negating concept. Here it is noteworthy that one of Piaget's findings is "negations" are essential for the establishment of more stable equilibriums [PIAG19: 10-12].

Because acting to perfect serves pure Reason, the employment of motoregulatory expressions in the active use of the somatic capacity of the senses is a capability that enters in to the synthesis of apprehension. The *Gestaltung* of spatial form is actualized in part by negations of *materia circa quam* in sensibility. This is how one out of the many possible spatial forms (Chapter 17, the topological synthesis of space) is apprehended for presentation to consciousness.

The transcendental place of a representation as *materia ex qua* for apprehension and apperception is important for presentation in sensibility. A representation immediately arising from receptivity cannot be canceled in sensibility by contradiction; opposition for such a representation must be through real opposition. On the other hand, a representation entering into the three-fold synthesis of the *Verstandes Actus* by way of the synthesis of reproduction in imagination *can* be canceled by mere logical opposition from a contradictory concept. In such a case neither reproduced concept can be *materia in qua* for an intuition. The *materia ex qua* arising from the synthesis of reproduction could also be placed in real opposition with that of any other concept, in which case the synthesis of a perception can contain something novel if only partial cancellation results. The *significance* of representation in sensibility for motoregulatory expression depends upon the transcendental places of origin for the *materia in qua* of the

conscious presentation in the whole of perception (both objective and affective). The significance is the matter in the composition of intent, and it follows that the synthesis of significance (signification) in transcendental topic is based on the ability to reflect upon the formal expedience of opposition (*Widerstreit*) for a *nexus* of agreement in judgmentation, which is to say: **perfection of aesthetical distinctness is the making of a coalition in representation through an anasynthesis of real opposition**. This is the acroam of perfection in distinctness.

Because this is a difficult point to grasp, owing to the abstractness with which it has been presented here, it is of some help if we look at this in terms of Piagetian regulating compensations in the process of equilibration:

[All] compensation works in an opposite or reciprocal direction to that of the disturbance (obstacle or gap), which means it either cancels (inversion) or neutralizes the disturbance (reciprocity), while gaining useful information . . . in addition to developing the negations which are involved, level by level, in the disturbance-compensation pairs.

The second general characteristic of the cognitive compensations is that they include a terminal evaluation of their success or insufficiency which is linked to the source of the regulation itself. Since this source consists of a nonbalance of the assimilation and of the accommodation, the final evaluation involves a judgment dealing with success (whole, partial, or missing). First there is the assimilation of the data, and afterward there is the possibility of the comprehension of new relations owing to the reequilibration of the assimilation and the accommodation, and to information taken from initially disturbing elements and finally integrated into the readapted behavior[.]

The third characteristic common to every compensation is the tendency to conservations through transformations, i.e. conservation of a state or of a progression, of a scheme or of a subsystem, etc. These preserving tendencies do not result at once in the construction of notions or structural principles of conservation (substance, etc.), for to reach this point, the compensations must be qualified; but in their initial qualified forms, these compensations from the very outset furnish functional outlines for later performances, just as the negations which they imply at every level prepare for the contrary operations equally necessary to the operational conservations [PIAG19: 28-29].

The determination of Quality in transcendental topic takes its *practical* objective validity as that-in-acting-for-aesthetical-perfection which adjudicates via compensations.

*Footnote to the Quality of transcendental topic:* We also have from this theory of real opposition a consequence for the idea of *intensive* magnitude, namely that the possibility of degree of intensive magnitude is bound up with Kant's theory of incomplete cancellation in real oppositions. Intensive magnitude is a unity that can be regarded as a multiplicity only by *approximation* to negation (= 0). Because intensive magnitude implies an *ordering process* (as we discussed previously), the order in which representations are negated by deprivation through real opposition dictates the degree of an intensive magnitude. We note that the *process* of deprivation through real opposition is carried out *between* moments in subjective time. A concept  $C_1$  reproduced in sensibility may be partially canceled if the opposition affects only one or a few of its *higher* marks. (Recall that higher marks are 'contained in' the concept; lower concepts are

‘contained under’). In other words, the opposing reproduced concept  $C_2$  can be in a merely partial opposition inasmuch as  $C_2$  is in opposition with only a part of the higher manifold of  $C_1$  but not with respect to the entire higher manifold of  $C_1$ . The summoning of concepts into the synthesis of apprehension through the power of imagination is determined through what is in conscious perception at a moment in time, and therefore the order in which such representations in the manifold of concepts are summoned is *significantly* determined by these contents in sensibility, which depends on the representational “path” taken in the successive integration of perceptions in subjective time. □

### The Internal and the External

Aesthetical perfection is not achieved all in a single step. Acting to perfect is a process. But this process is one in which what has transpired in transitions from one moment in time to subsequent ones constrains the acts of *Gestaltung* within this process. Acts of formation in the process of equilibration are subject to “boundary conditions” such as the requirement of continuity in Self-*Existenz* (the judicial Idea), continuity in Nature (objectivity), coherence in the context of life (Meaning), and continuity in sense (aesthetic Idea). The manner in which these constraints are played out in a succession of appearances of expression of actions are determinations of the unity of that *nexus* of actions called “behavior.”

The determination of transcendental place in regard to Relation plays a key role in the manner in which acts of formation and acts of judgmentation play out. Analytically, the notion of Relation divides into internal Relation and external Relation. We quite easily see this in the structure of the categories of Relation, i.e. substance *and* accident (or subsistence *and* inherence) or causality *and* dependency. (The notion of community is reciprocal causality and dependency at a single moment in time). Pre-Kantian philosophy had always tried to apply ideas of internal and external Relations to *things* regarded as they are in themselves. Leibniz’ monads were a product of this failure to take proper account of epistemology, as was the reification of space in Newton’s physics. The Critical Philosophy teaches us that all objective knowledge of such Relations have objective validity only insofar as they concern appearances, not things-in-themselves.

In an object of pure understanding, only that is intrinsic which has not the least reference (regarding *Dasein*) to anything whatever that is different from it. The internal determinations of a phenomenal substance in space, on the contrary, are nothing but relationships, and it is itself wholly a sum of mere Relations. . . . As Object of pure understanding, on the other hand, every substance must have internal determinations and powers that get to its internal reality. Yet what can I think of as internal accidents except those which my inner sense offers me, namely that which is either itself *thinking* or is analogous to it? [KANT1a: 369 (B: 321)]

Those external determinations, without which Objects cannot be, are still conditions in our reason, without which we cannot think certain objects through reason when these same conditions are not determinations of the object itself. These conditions are consequently subjective, and their concepts mean nothing to that object.<sup>1</sup> All synthetic judgments of pure reason are accordingly subjective, and the concept itself means relationships of acts of reason for itself [AK17: 355].

Internal and external Relations in forms of sensible appearances call upon the two complementary pure forms of sensible intuition, i.e.,

In space there are solely external relations, in time purely internal ones; the absolute is absent [AK23: 37].

The determination of transcendental place means determining whether a representation has its source from receptivity or from concepts reproduced through the synthesis of reproduction in imagination, or from both. An intuition solely from receptivity can have its transcendental object regarded as nothing other than an undetermined appearance. An intuition from both receptivity and reproductive imagination has for its object a phenomenon. But if an intuition arises solely from concepts, without any actual sensation from receptivity at that moment in time, the object is an object of understanding made purely through Reason. It is an intuition of an *idea* if it lacks the possibility of being presented through receptivity in actual sensuous experience, and its object is a *noumenon*. If the intuition is represented solely from concepts such that there is nothing in its constitution that lacks the possibility of actual representation through receptivity, then its object is a *Critically* possible object of pure speculation, and if this object is contrary to the overall context of the actual in Nature it is a *supernatural fantasy*. For example,

Now Medusa alone was mortal; for that reason Perseus was sent to fetch her head. But the Gorgons had heads twined about with the scales of dragons, and great tusks like swine's, and brazen hands, and golden wings by which they flew; and they turned to stone such as beheld them.<sup>2</sup>

This explanation of the role of transcendental place in Relation is an explanation from the theoretical Standpoint. We must next ask: What is this role from the judicial Standpoint? Here I think we can gain the understanding we need by first looking at the existence of myths and the fact that even ridiculous myths were held-to-be-true by well-respected people. For example,

Megasthenes records that on Mount Nulus there are men with their feet reversed and with eight toes on each foot. On many mountains there are men with dogs' heads who are covered with wild beast skins; they bark instead of speaking and live by means of hunting and fowling, for which they

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<sup>1</sup> Kant means that concepts of the conditions necessary for our own understanding of objects cannot signify anything in regard to internal determinations of the *noumenal* object. Merely because we can think of objects only according to our own rules of understanding, this does not mean that we know the object as a *noumenon* must be that way. To jump to such a conclusion is a speculative subreption stemming from failure to reflect properly on the transcendental place from which our knowledge has its source.

<sup>2</sup> Apollodorus, *The Library*, II.iv.2.

use their nails. He says they were more than 120,000 in number when he published his work. Ctesias writes that in a certain Indian tribe women bear children only once in their lifetime and the children begin to go grey as soon as they are born. He also writes of a tribe of men called Monocoli who have only one leg and hop with amazing speed. These people are also called the Umbrella-footed, because when the weather is very hot they lie on their backs stretched out on the ground and protect themselves by the shade of their feet. The Monocoli are not far away from the Cave-dwellers, and further to the east of these are some people without necks and with eyes in their shoulders.<sup>3</sup>

If you should think Pliny's myth is too ridiculous for us to take seriously, consider this one:

Thus, for the formation of higher cultures the existence of lower human types was one of the most essential preconditions . . . It is certain that the first culture of humanity was based less on the tamed animal than on the use of lower human beings. Only after the enslavement of subject races did the same fate strike the beasts. For first the conquered warrior drew the plow – and only after him the horse. Hence it is no accident that the first cultures arose in places where the Aryan, in his encounters with lower peoples, subjugated them and bent them to his will . . . As long as he ruthlessly upheld the master attitude, not only did he remain master, but also the preserver and increaser of culture.

Blood mixture and the resultant drop in the racial level is the sole cause of the dying out of old cultures; for men do not perish as a result of lost wars, but by the loss of that force of resistance which is continued only in pure blood. All who are not of good race in this world are chaff.<sup>4</sup>

Whether you and I like it or not, there were people by whom one or the other of these myths was held-to-be-true as a part of Nature, and in the case of the latter there are today ignorant thugs who still hold Hitler's myth to be true. Yet, as Kant said more than once, determining judgment cannot err in its judgments and sensibility does not err because it does not judge. How, then, are myths like these possible?

The clue to the answer is right before our eyes when we note that in both examples above the concepts expressed are not reports of direct experience but, rather, are unexperienced speculations. Pliny merely reported as fact unverified claims he had read, and, while he found these "facts" to be wondrous, it is obvious he did not find them unbelievable. Hitler, likewise, did not report facts he himself had discovered but, rather, crackpot anti-Semitic theories that happened to harmonize with his own hatred of the Jews and megalomaniacal need to see himself (and, by proxy, "Aryan" Germans) as superior to other people. Even his idea of a "master race" was not his own but the product of the glandular enthusiasms of Nietzsche.

The things expressed in both myths are made up in part from fragments of experience and in part from ideas deduced from these fragments. The concepts of "eight", "toes", and "feet" are each objects of possible experience; it is merely possible speculation that allows them to be put together, along with the idea of reversed feet, to make up an image of the inhabitants of Mount

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<sup>3</sup> Pliny the Elder, *Natural History*, Bk. VII §23. Pliny's book was the mainstay of what we might overgenerously call the science curriculum in medieval times. It is a splendid monument to ignorance.

<sup>4</sup> Adolf Hitler, *Mein Kampf*, pp. 295-296.

Nulus. All that is needed in order to integrate objects of actual experience into the fantasy of the image is a subjective ground of belief.

Now sensibility flows into acts of understanding, and from this springs the diagonal direction of understanding, where it sometimes obtains truth, sometimes semblance. Sensibility, and understanding insofar as it passes judgment, is therefore the cause of semblance. Sensibility as such is not a source of errors, however, for so far as it aims at its objects there is congruence with the laws of this power of knowledge. The ground that the senses do not judge erroneously is that they cannot judge at all. For only understanding judges. Error is therefore neither in understanding alone nor in the senses alone, but rather always lies in the influence of the senses on understanding, when we do not distinguish well the influence of sensibility on understanding [KANT8a: 282-283 (24: 824-825)].

In making this point Kant was always vague about what sort of sense it is whose inflow exerts this influence on the understanding one obtains through judgment, and about what sort of judgment is under this influence. However, we are now in a position to understand that the type of judgment under this influence is reflective judgment, and it follows from this that the sort of sense involved is affective perception. In a manner of speaking, “believe what you will” could serve as the motto of judgmentation in reflection. Inferences of reflective judgment (ideation, analogy, and induction) mark out the general concepts that determining judgment then determines. Reflective judgment is tasked with making a system of Nature, but the only pure law that regulates these judgments is that of the formal expedience of Nature. It is regulated by entirely subjective grounds for holding-to-be-true-and-binding, and its judgments are entirely unconcerned with particular objects, either as appearances or as phenomena.

Internal and external Relation in transcendental topic, in the judicial Standpoint, therefore do not concern the constitution of the objective cognition. Relation in transcendental topic goes to determination of the point of origination of sensuous perception, i.e. *to the determination of sense*. But this is Relation in the data of the senses (emergent properties), and the *determination* of this is the agent-patient Relation. The three functions are: *nous* → *soma* (the internal), *soma* → *nous* (the outer), and *nous* → *nous* (the interior, which is the transitive Relation). The first *employs soma* as means of perception; the second lays the place of perception with an external cause; the third transcendental place rests entirely with the capacity for understanding. Relation in the process of reflective judgment is not immediately concerned with whether or not cognition is objectively true; rather, its immediate concern is with aesthetical perfection of the agreement between sensibility and the Subject’s laws of sense-semblance.

Objective truth (congruence of the cognition and the object) is, of course, a factor in whether or not a representation in sensibility is formally expedient in Nature. However, here we must bear in mind that we have no *material* criterion of truth, no Hegelian Absolute. The situation would be

otherwise were we in possession of innate ideas of things, but this is not the case for the human mind. Neither are we in possession of an innate objective *Gestalt* for the intuition of objects (an ability which, if we had it, could provide innate intuitions of appearances). Neither do we possess a copy-of-reality mechanism. The capacity for pure intuition of space is a *process* of a merely topological synthesis enabled by the capacities for motoregulatory expression and kinaesthetic sensational feedback. From this process comes not the synthesis of representations of things but only the synthesis of intuitions as *forms of expedience*.

### The Determinable and the Determination

In the context of transcendental topic, that which is the determinable and that which is the determination are none other than *matter* and *form*. The significance of transcendental place in this regard is: which of these two is the condition for the representation of the other? Must the matter precede the form, or must the form precede the matter? Of matter and form Kant writes:

These are two notions that ground all other reflexion, so inseparably are they bound up with every use of understanding. The former [matter] signifies the determinable in general, the latter [form] its determination (both in the transcendental sense since one abstracts from all differences in what is given and from the way in which that is determined) . . . In every judgment one can call the given concepts logical matter (for judgment), their relationship (by means of the copula) the form of the judgment. In every being its components (*essentialia*) are the matter; the way in which they are connected in a thing, the essential form . . . Understanding, namely, demands first that something be given (at least in the concept) in order to be able to determine it in a certain way. Hence in the concept of pure understanding matter precedes form . . . But if it is only sensuous intuitions in which we determine all objects merely as appearances, then the form of the intuition (as a subjective constitution of sensibility) precedes all matter (the sensations), thus space and time precede all appearances and all *data* of experience, and instead first make the latter possible . . . But since sensuous intuition is an entirely peculiar subjective condition, which grounds all perception *a priori*, and the form of which is primitive, thus the form is given for itself alone, and so far is it from being the case that the matter (or the things themselves, which appear) ought to be the ground (as one would have to judge according to mere concepts), that rather their possibility presupposes a formal intuition (of space and time) as given [KANT1a: 369-370 (B: 322-324)].

When a conscious representation takes its transcendental place from receptivity, the *a priori* determinations of space and time must precede sensation because without such a determination coming first there is no distinction possible between objective perception (intuition) and affective perception. Empirical intuition is sensation *given* form; but to be “given” in this sense of the word means the representation in sensibility is marked at a moment in time, and this cannot be without the presupposition of a spatial form that structures sensation. Sensation implies consciousness in sensibility, and that part of sensation not bound in the intuition is *feeling*. Thus we say that it is the synthesis in apperception that makes perception but it is the synthesis of the pure intuition of space that distinguishes objective sensation from affective feeling. The synthesis in apperception

between moments in time presupposes the pure intuition of time as the form of inner sense; the synthesis of apprehension presupposes the pure intuition of space.

But when perception takes its transcendental place from spontaneity, sensibility is structured from concepts in the synthesis of imagination. In this case, because concepts are rules for the reproduction of intuitions and the concepts are themselves structured under the transcendental schemata, it is the concept as *matter* (*materia ex qua, materia circa quam*) that comes first in logical order and it is the reproduction of a concept in the synthesis of imagination from which the forms of time and space in the intuition must follow insofar as a conceptual representation is made part of the *materia in qua* of intuition.

However, there is another consideration that comes into play here, arising from the character of sensibility as a *made* representation. Let us suppose that spontaneity alone is the source of all the *materia in qua* of a particular intuition. We must then allow that a multiplicity of concepts, each with possibly a different schematism of the transcendental schemata, can go into the synthesis of a new intuition. There must then be a *reconciliation* of the diversity in the schematisms of time presented in imagination. Furthermore, when sensibility contains contributions from both receptivity and spontaneity, there is likewise the requirement for a reconciliation process capable of dealing with both sources of representations, since receptivity cannot be presumed to have its form of representation dictated by spontaneity in determining judgment. There is, in short, a requirement for a determining factor in the synthesis of apprehension. It is here where the schematism of Modality in transcendental topic meets with Modality in aesthetical perfection.

Modality in aesthetical perfection is aesthetical certainty, which is simply the matter of the form of belief. Determination of transcendental topic requires a reflection (i.e. a reflective judgment), and such a judgment falls under the principle of formal expedience in Nature. In order for us to understand this interplay between reflective judgment and synthesis in sensibility we must better understand what it is that is meant by the term aesthetical certainty (belief as subjective holding-to-be-binding, from which follows *objective* holding-to-be-true in intuition).

Indeed, persuasion – which is a holding-to-be-true for which we can not make out on our own whether it rests on merely subjective or on objective grounds – in contrast to merely felt conviction – in which the subject believes himself to be conscious of the latter [objective grounds] and of their sufficiency, though he cannot name them or make clear their connection with the Object – are both not to be reckoned among the modalities of holding-to-be-true in dogmatic knowledge, whether it be theoretical or practical, since this should be a knowledge from principles, and must therefore also be capable of a clear, intelligible, and communicable representation.

The meaning of this holding-to-be-true, distinct from opinion and Knowledge [*Wissen*] which are founded on judgmentation in the theoretical sense, can now be set in the expression *belief*, whereby we understand an assumption or presupposition (hypothesis) which is necessary only because it is



necessarily grounded by an objective practical rule of behavior by which we indeed do not theoretically examine the possibility of its execution and from it the production of the resultant Object in itself, but yet nonetheless subjectively recognize the only way of harmonization of the same with the final purpose [KANT24: 386 (20: 297)].<sup>5</sup>

**Belief**, in other words, is not objective Knowledge (in the *Wissen* sense) nor knowledge in the cognitive sense, but rather **is an affective state of mind grounded in some practical rule of behavior**. It is because of this grounding in a rule of behavior that belief regarded from the judicial Standpoint is properly seen as a holding-to-be-binding rather than a holding-to-be-true. This latter term objectively applies to only the cognitive factor in sensibility (the intuition). The practical rule of behavior is not a theoretical maxim nor is it a theoretical imperative. Instead it is a sensorimotor connection, and the ensuing action (whether actualized or merely possible) *is* an empirical meaning. A belief that goes unquestioned (by aesthetical reflective judgment) is a holding-to-be-binding that is *aesthetically* certain.

When the Subject's activity is *thinking* and the transcendental place of the intuition is under domination by spontaneity in the synthesis of imagination from concepts, affective perceptions still nonetheless arise in sensibility because the synthesis of space always involves data of kinaesthetic feedback. This in no way means that these perceptions are to be regarded as *emotions* (as that word is commonly used). The affective perceptions might have an emotional *context* in the overall *cycle* of behavior, but an affective perception as such is not an emotion. In this treatise we use the word *emotivity* to mean *expression* in somatic actions, and affective perception signifies only that part of presentation in sensibility that does not become part of the representation of an object. Insofar as an affective perception is part of the determination of sensorimotor expression through teleological reflective judgment it can be called a **preference**. This terminology stems from the act of teleological reflective judgment through which the Subject represents a possible activity, i.e. the act of teleological reflective judgment represents a connection of desiration. Such an act must be presupposed as a condition for *acting*, but it is only a necessary and not a sufficient condition for expressing the act through an action because realization of the action requires a determination of the appetitive power of pure practical Reason (which makes a mere Desire<sup>6</sup> into an appetite).

Presentation of a belief through the synthesis of reflective judgmentation is thus the determining factor in the synthesis of apperception as well as in the synthesis of apprehension. Its ground is *acting to perfect* (aesthetically) according to an Ideal for the process of reflective

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<sup>5</sup> The quote is from Kant's unpublished essay, "What real progress has metaphysics made in Germany since the time of Leibniz and Wolff?" The essay was published two months after Kant's death in 1804 by Friedrich Theodor Rink, a friend to whom Kant had given the manuscript drafts of the essay.

<sup>6</sup> Recall that desire + desiration → Desire.

judgment. Because the principle of all reflective judgments is the principle of formal expedience in Nature, and because presentations of reflective judgments are Desires under the principle of happiness, we can describe the subjective character of belief as *presentation of a condition of expedience for happiness*. Happiness as an Object (an objective) is the determining principle for the Modality of aesthetical perfection.

#### § 4. The Metaphysic of Nature

In the section just completed we have looked at aesthetical perfection, which is the Ideal and standard gauge of teleological reflective judgment. The orientation of Reason through reflective judgment follows the pathway of perfection, and so far as aesthetical vs. logical perfection is concerned, it is aesthetical perfection that takes priority in judgmentation over logical perfection. That this must be so is obvious from both the judicial Standpoint and empirical evidence from developmental psychology. The infant, who comes into the world possessing no object concepts and no pre-formed real division between the Self and the not-Self, has only the subjective factors in judgmentation upon which to build a world-model. Concepts are refined and made more logically perfect in one's understanding; this is a consequence of the process of equilibration. But concepts must have a beginning, and for the phenomenon of the human mind the point of origin for all objective concepts rests upon subjective principles of reflective judgment.

However, teleological reflective judgment is also tasked with seeing to the making a system of Nature, and such a system is a system of objective cognitions *made* to harmonize in the manifold of concepts as perfectly as the thinking Subject knows how. All of us, whether we are scientists by training or not, build for ourselves a model of the world – a system of a personal applied “metaphysic” of Nature – and are in this loose sense “physicists.” Those who are trained in the *discipline* of physics are, of course, more exacting in empirical world-model-making and are “better” physicists than those who are not so trained. But by the time we reach adulthood all of us have expectations for “how the world should be,” and anything we encounter in experience that gainsays these expectations comes as a surprise, as a wonder, or even as a shock to us. One late afternoon many years ago, a friend and I were leaving work (having been inside the building all day), and as we stepped outside we encountered a dirty-orange sky. What had happened was that a major forest fire not far from the city had filled the sky with smoke, and this smoke was scattering the sunlight in such a way as to produce this effect. The vision of an orange instead of blue sky was so stunning that both of us stopped in our tracks and looked at each other. My friend expressed what we both were feeling when he said, “What planet is this?”

Kant's 1786 book, *Metaphysical Foundations of Natural Science*, is his applied metaphysic of Nature written from the theoretical Standpoint. Our primary concern in this Section does not lie with the details of this applied metaphysic insofar as ontology is concerned.<sup>7</sup> However, if we are to understand how non-cognitive teleological judgment leads to the structuring of a cognitive system of Nature, we must examine some of the ideas of this metaphysic but do so from the judicial Standpoint. It is from this Standpoint that the Critical *epistemology* is viewed.

Kant organized his applied metaphysic around the four general titles of representation (Quantity, Quality, Relation, and Modality). In the context of this metaphysic these titles are named phoronomy<sup>8</sup>, dynamics, mechanics, and phenomenology, respectively. The first title deals with *kinesis* ("motion")<sup>9</sup>, the second with the idea of moving powers (as cause of motion<sup>10</sup>), the third with communication of motion in appearances, and the last with the assimilation of appearances into experience. When we examine this applied metaphysic from the judicial Standpoint, we must do so from the point of view of examining what is necessary in judgment in order to be able to come to know Nature in terms of such an ontology.

In *Critique of Judgment* Kant tells us,

The *determining* power of judgment by itself has no principles that ground *concepts of Objects*. It is no autonomy, for it merely *subsumes* under given laws or concepts as principles. . .

But the *reflecting* power of judgment has to subsume under a law that is not yet given, and which is in fact only a principle for reflexion on objects for which objectively it is entirely lacking a law or a concept of the Object that would be adequate as a principle for the cases occurring. Now since no use of the faculty of knowledge can be permitted without principles, in such cases the reflecting power of judgment must itself serve as a principle which, since it is not objective and cannot underlay a sufficient ground of knowledge of the intention of the Object, can serve as a merely subjective principle for the expedient use of the faculty of knowledge – namely, for reflecting on one class of objects. In reference to such cases, the reflecting power of judgment therefore has its maxims, and indeed necessary ones, for the sake of the cognition of natural laws in experience in order to arrive by their means at concepts, even if these are ideas of reason, if it needs these merely in order to come to know nature according to empirical laws [KANT5c: 257 (5: 385-386)].

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<sup>7</sup> This does not mean that Kant's theoretical metaphysic does not have value in its own right. Many people have assumed that Kant's *Metaphysical Foundations* was an *ex post facto* effort to work backwards from Newtonian physics to a philosophy of physics. Margenau, for example, seems to hold this view. However, this is a mistaken idea of what Kant accomplished in this work and, far from justifying Newton's physics, it contains the seeds of many ideas that are now current in modern physics (as well as some that perhaps ought to be current but are not). The reason I am not going to discuss this metaphysic in its own right in this chapter is because our purpose here is not to critique the applied metaphysic as such but rather to uncover in it clues we need to understand teleological reflective judgment.

<sup>8</sup> The word "phoronomy" has fallen out of usage in modern times. In physics the term has been replaced by the word "kinematics." The word is derived from a Greek word that roughly translates as "law of carrying."

<sup>9</sup> The *Metaphysical Foundation* restricts itself to appearances of motion in outer sense, e.g. corporeal motion in the usual sense of the word "motion." However, our general consideration here will always be with respect to the phenomenon of "motion" in the more general Greek sense of *kinesis*.

<sup>10</sup> This must not be confused with *causality*; we must remember our earlier distinction between cause and causality. The notion of causality belongs to Relation, not to Quality. A cause is a "what" (pertains to *Dasein*); causality is a "how" (pertains to *Existenz*).

Let us break this down a bit. In Critical ontology determining, reflective, and practical judgment are processes and a process, regarded as an object, is an *Unsache*-thing. The term “power of judgment” refers to the *Kraft* of the process of judgment. The *Kraft* of the process of determining judgment does not exhibit the ability to generate general concepts of Objects and must originally obtain its concepts from intuitions through the synthesis of re-cognition in imagination. What the *Kraft* of determining judgment does exhibit is the ability to combine concepts in a manifold of concepts through the categories of understanding.

The *Kraft* of the process of reflective judgment, on the other hand, does exhibit the capacity to form concepts of Objects, but does not do so *immediately* (because all representations of reflective judgment are affective). Rather, it does so *mediately* by judging that a presentation of sensibility is expedient for cognition – i.e. by marking sensibility at a moment in time, which is what *defines* a representation of sensibility to be an intuition. One way in which we can regard this act of reflecting judgment is to say that reflective judgment “pulls the trigger” for the synthesis of re-cognition in imagination. Whether an intuition is so marked to emerge from its synthesis as the concept of an Object is determined by the *momenta* of the aesthetical reflective judgment and, in particular, by the Quality of *beauty* in an aesthetical reflective judgment.<sup>11</sup> Aesthetical reflective judgment is judgment of composition in reflective judgment, hence is in a manner of speaking the judgment of “what” and therefore a judgment in terms of *Dasein*.

Teleological reflective judgment, on the other hand, is connection in reflective judgment, thus is judgment of “how” and pertains to the *Existenz* of the concept of an Object. Its partner in the synthesis of apprehension is the synthesis of the pure intuition of space, which we have already noted is bound up with motoregulatory expression and the activity loop in the organization of information flow in judgmentation and reasoning (figure 17.5.1). Teleological reflective judgment is therefore not *constitutive* in the generation of concepts of objects but is instead *regulative* in the expedient use of the faculty of knowledge. The regulatory *acts* of teleological reflective judgment can be regarded as expressions of maxims of organization. We recall that the term “maxim” refers to an organized *nexus* of specific rules, and in the case of teleological reflective judgment these rules are the basic rules for *actions* in the spontaneity of the Organized Being.

Two maxims for teleological judgmentation of Nature were stated by Kant in consequential form (that is, in terms of outcomes in judgmentation) in [KANT5c: 258-259 (5: 387)], and we

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<sup>11</sup> Beauty, as a *momentum* of judgment, has the character of a “terminating energetic” (to use the Piaget-Janet terminology), and so marks a balance in opposition (*Widerstreit*) between the feelings of *Lust* and *Unlust*.

previously saw them in Chapter 16 (§4). The first maxim, stated in this consequential context, is: All generation of material things and their forms must be judged<sup>12</sup> as possible according to merely mechanical laws. The second maxim is: Some products of Nature can not be judged as possible according to merely mechanical laws; their judgmentation requires a different law of causality, namely that of final cause. Taken together these constitute a natural dialectic. As we discussed in Chapter 16, these maxims are subcontrary but not contradictory so long as we apply them only to appearances and not to things regarded as they are in themselves.

All appearance<sup>13</sup> of an antinomy between maxims of the genuinely physical (mechanical) and the teleological (technical) manners of explanation therefore rests upon: that one confuses a fundamental principle of the reflecting power of judgment with that of the determining, and the *autonomy* of the former (which holds good merely subjectively for the use of our reason in respect to the particular law of experience) with the *heteronomy* of the latter, which must conform to laws given from understanding (general or particular) [KANT5c: 261 (5: 389)].

In *Critique of Judgment* the context of these maxims is that of judgmentation in general (*Beurtheilung*); what we must do here is understand how these maxims are to be expressed within the narrower context of the process of teleological reflective judgment. This narrower form of expression is, in fact, the *synthesis* of these two maxims. To see this we need to consider the significance of Kant's statement that in its character of "serving as a principle for the expedient use of the faculty of knowledge," the principle of teleological reflective judgments is a principle "for reflecting on *one* class of objects." What "one class" of objects would this be? The answer here becomes obvious as soon as we note that the maxims of reflecting judgment are maxims *for causality and dependency*.

An Object signifies, on the one hand, the thing-like character of a transcendental object. Cognition of an Object can be formally expedient only if the form of representation in cognition has the possibility of *real* connection in the manifold of concepts under the category of causality and dependency. We can invent problematic predications such as "We stood in the dawning light of the new day and watched the sunset," but we clearly understand that this is not a *real* predication of any actual experience.<sup>14</sup> It is mere word-play (which *is* an action possible for a human being), and its transcendental place is judged as being in spontaneity and not in receptivity. The first maxim is a rule *constraining the possible real contexts* of a concept in the

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<sup>12</sup> Kant used the word *beurtheilt* in the original text. The connotation of "judged" in this maxim would be better expressed in translation as "have judgment passed on them" but this is more unwieldy to say.

<sup>13</sup> *Anschēin*. This is "appearance" used in a non-technical manner and denotes "seeming to be an antinomy." Kant's *technical* term translated as "appearance" is *Erscheinung*, which means the state of our senses resulting through receptivity, i.e. "appear-ation" (which would be a better translation of *Erscheinung* if only "appear-ation" were a legitimized English noun).

<sup>14</sup> If someone were to say this to you, do you think you might say something like, "Wait a minute. Don't you mean 'watched the *sunrise*'?"

manifold of concepts through constraint of permissible transcendental schemata through which the *significance* of the concept is vested in the real meaning of the intuition.

On the other hand, Object also denotes cognitions of the forms of appearance of an object. But all representations of forms of appearance are *made* representations (no copy-of-reality), and *making* a representation of expedient form requires *action* by the Organized Being. However, the only type of causality we can pin these actions on is the causality of freedom, i.e. on the *Kraft* of judgmentation to make representations. The second maxim tells us that we must regard the synthesis of beliefs in terms of Self-actions judged expedient for application in serving the categorical imperative of pure practical Reason. This is the second “wing” of the principle of teleological reflective judgments, through which the patiency of the Organized Being in making its own noetic representations necessarily calls upon the agency of its motoregulatory capacity. The object must conform to the cognition, and the cognition is made possible through rules of expression of judicial acts.

Putting these two sides together, we have the “class of objects” that serve expedience in the employment of the capacities for knowledge in the Organized Being. **The Object of teleological reflective judgment is law.** Teleological reflective judgment as a process is essentially proactive, impulsive, is tied to motoregulatory expression, and serves a final purpose rather than an efficient cause. Despite the affective character of its judgments, the consequences of its acts make possible a systematic *structure* in cognition. The meeting place where “a purpose is transformed into a cause” (to use Margenau’s words) is a teleological reflective judgment, and the synthesis of Kant’s two maxims into one tenet can be justly called **the maxim of unity in purpose and cause**. To use affective metaphors, “teleological judgment likes laws” and “laws satisfy teleological judgment.”

The laws adjudicated and given conceptual representation in consequence of a teleological judgment of formal expedience do not have the rock-hard determinism characteristic of the constructions of the process of determining judgment. They arise first as beliefs held-to-be-true on subjective grounds, and one can say that all empirical thinking finds itself engaged in an activity of concept structuring aimed at preserving the *equilibrium of a system of beliefs*, the attainment of which often calls for the accommodation of the *belief structure* under the impact of the capacity for the arousal of *doubt* by aesthetical reflective judgment. Our task at hand is to go after a clearer understanding of the transcendental character of belief-structuring as we see this exhibited in the Critical metaphysic of Nature.

Toward this end, let us recap what is meant by the idea of Nature. There is a twofold context as the word “nature” gets used, which Kant pointed out in the opening paragraph of his treatise:

If the word nature is taken simply in its *formal* meaning, where it means the first inner principle of all that belongs to the *Dasein* of a thing, then there can be given as many different natural sciences as there are specifically different things, each of which must contain its own peculiar inner principle of the determinations belonging to its *Dasein*. But nature is also taken otherwise in its *material* meaning, not as a constitution but as the embodiment of all things insofar as they can be *objects of our senses*, and thus also of experience, under which is therefore understood the whole of all appearances, i.e. the sensible world with the exclusion of all non-sensuous Objects. Nature taken in this meaning of the word has two principal parts, in accordance with the principal division of our senses, where the one contains the objects of *outer* sense, the other the object of *inner* sense; hence is possible a twofold doctrine of nature, the *doctrine of body* and the *doctrine of soul*, where the first takes into consideration *extended* nature, the second *thinking* nature [KANT15a: 183 (4: 467)].

Kant's *Metaphysical Foundations of Natural Science* focused almost all its effort on the first of these doctrines (extended nature in the "doctrine of body"). As he commented,

[A] separated metaphysic of corporeal nature does excellent and indispensable service for the *general* [metaphysic], in that it furnishes examples (cases *in concreto*) in which to realize the ideas and theorems of the latter (properly, transcendental philosophy), i.e. to underlay with sense and meaning a mere form of thinking [KANT15a: 192 (4: 478)].

With this end in mind, we also need a briefing on what, from the theoretical Standpoint, stands as the general for rational principles of the doctrine of extended Nature. The schema of a determined phenomenal object is given by the categories of understanding, and we already know that the schematism of conceptualization occurs through the transcendental schemata, which are time-determinations. Because of this,

The basic determination of something that is to be an object for outer sense must be motion, because only thereby can these senses be affected. Understanding traces back all other predicates of matter belonging to its nature to this, and so natural science, therefore, is generally either a pure or applied *doctrine of motion*. The *metaphysical* foundations of natural science are therefore to be brought under *four* principal parts, wherein *first* in accordance with its composition *motion* is regarded as a pure *quantum*, without any quality of the movable, and may be called **phoronomy**; the *second* takes into consideration motion as belonging to the *quality* of matter, under the name of an original moving power, and is therefore called **dynamics**; the *third* regards matter with this quality in *relation* through its own motion versus another, and therefore appears under the name of **mechanics**; the *fourth*, however, determines its motion or rest merely in reference to the mode of representation, or *modality*, and thus as appearance of outer sense, and is called **phenomenology** [KANT15a: 191 (4: 476-477)].

Without *change* (motion in the general sense as *kinesis*) there is no ground in an object for differentiating one moment in time from another. We discussed this previously when we dealt with the *Realerklärung* of equilibrium. This is why the Critical ontology of objects of outer sense must put motion in the primary place in the determination of phenomena. Supersensible ideas, which are needed for binding together explanations of objects *systematically*, must likewise take their grounds from phenomenal motion if they are to apply with theoretical objective validity to possible sensuous phenomena of experience.

#### § 4.1 Phoronomy

*Transcendental* matter is that in an object of outer sense which corresponds to sensation. But *phenomenal* matter is

the *movable* in space. The space which is itself movable is called material, or also *relative space*; that in which all *motion* must finally be thought (which is itself therefore utterly immovable) is called pure, or also *absolute space* [KANT15a: 194 (4: 480)].

Because we have covered “space” thoroughly in Chapter 17, there should be no difficulty here in understanding Kant’s basic explanations of these terms. Relative space is itself an object, although *at root* only a mathematical object, and Piaget’s work has demonstrated that the child’s conception of this space co-arises with the development of his conception of objects “in” this objective space. Pure space, of course, is the topological synthesis of form (*Gestaltung*, i.e. formation) during the generation of an empirical intuition in the synthesis of apprehension.

As for Kant’s explanation of what “motion” is,

Motion of a thing is the *change of its outer relationships* to a given space [KANT15a: 196 (4:482)].

As brief as this statement is, it is nonetheless loaded with implications. First, a *thing* is an object regarded as having an *Existenz* independent of its representation and the Organized Being who represents it.<sup>15</sup> The term “thing” is synonymous with Piaget’s term “object.” To say that its motion is change of its outer relationships to “a given space” may at first glance appear to be a Newton-like proposition, but here we must remember that the “given space” is *also* an object and, furthermore, a “material” object is givable (*dabile*) only by means of the topological synthesis of the pure intuition of space. The *transcendental matter* of objective space is that which corresponds to how sensibility is affected, and for the *Gestaltung* of an *objective* space this effect has no other originating source than *kinaesthetic feedback* from motoregulatory expression.

Next, what is meant by “change of its outer relationships”? An objective outer relationship in perception is a relationship between spatial *forms*. But because an intuition is a singular representation at a moment in time, we cannot speak of forms *in the plural* without taking into account the form of an empirical intuition at one moment in time in comparison to that of another at a second moment in time. Therefore, *change* in outer relationships is the *extensive magnitude* of a difference (Quantity of differentiation in the 2LAR of general representation) between successive moments in time. As a singular representation, an intuition is to be regarded in the topological structure of objective space as a *point*:

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<sup>15</sup> A real object-as-thing is judged as {unity, limitation, substance & accident, *Dasein* & *Nichtsein*}.



In phoronomy, since I am acquainted with matter through no other property but its movability, and may thus regard it only as a point, motion can only be considered as the *description of a space* – in such a way, however, that I attend not solely, as in geometry, to the space described, but also to the time in which, and thus to the speed with which, a point describes the space. Phoronomy is thus the pure doctrine of magnitude (*mathesis*<sup>16</sup>) of motions. The determinate concept of a magnitude is the concept of the generation of the representation of an object through the composition of the homogeneous. Now since nothing is homogeneous with motion except motion in turn, phoronomy is a doctrine of the composition of the motions of one and the same point according to its speed and direction [KANT15a: 202 (4: 489)].

In the terminology of the mathematics of point set topology<sup>17</sup>, this process of generation is called the generation of a *system of neighborhoods* of a point. The distinction between phoronomy and this operation of pure mathematics comes from the necessary inclusion of the pure intuition of time in the case of phoronomy, which is lacking in point set topology.

Because with “change” we are dealing with relationships between distinct yet homogeneous representations of objects in time, and because motion is change of outer relationship with respect to an empirical objective space, we might suspect – and Kant confirms – that all motion must be regarded as relative motion. Kant called this **the fundamental principle of phoronomy**:

Every motion, as object of a possible experience, can be viewed arbitrarily as motion of the body<sup>18</sup> in a space at rest, or else as rest of the body, and, instead, as motion of the space in the opposite direction with the same speed [KANT15a: 200 (4: 487)].

Again we stress that “space” here is also an object, and change in outer relationship is therefore change in outer relationship between two material objects.

If I am to explain the concept of matter, not through a predicate that belongs to it itself as an object, but only by the relationship to the faculty of knowledge in which the representation can first of all be given to me, then matter is every *object of the outer senses*, and this would be merely the metaphysical explanation thereof. Space, however, would be merely the form of all outer sensuous intuition . . . *Matter*, in opposition to *form*, would be that in outer intuition which is an object of sensation, and thus the properly empirical of sensible and outer intuition because it can in no way be given *a priori*. In all experience something must be sensed, and that is the real of sensuous intuition, and therefore the space in which we are to arrange our experience of motion must also be perceptible – that is, it must be signified through what can be sensed, and this, as the embodiment of all objects of experience, and itself an Object of experience, is called *empirical space*. But this, as material, is itself movable. But a movable space, if its motion is able to be observed, presupposes in turn an enlarged material space, in which it is movable . . .

Thus all motion that is an object of experience is merely relative; and the space in which it is observed is a relative space, which itself moves in turn in an enlarged space . . . so that matter moved with respect to the first can be called at rest in relationship to the second space, and these variations in the concept of motions go forward with the variation of relative space *ad infinitum*. To assume *as given in itself* an absolute space denominates something which can be observed neither in itself nor in its consequences . . . Absolute space is thus *in itself* nothing, and no Object at all, but rather means only any other relative space, which I can think beyond the given space [KANT15a:

<sup>16</sup> Literally, “to learn.” The term is especially applied to the learning of mathematics. In the present sense, phoronomy is “to learn of motions.”

<sup>17</sup> for more on this see: John D. Baum, *Elements of Point Set Topology*, NY: Dover Publications, 1964.

<sup>18</sup> Kant earlier noted in his treatise that “body” meant phenomenal matter.

194-195 (4: 481)].

Kant in this conclusion is telling us directly that Newton's reification of absolute space as a thing is an ontological error. Absolute space has *no* "nature" of its own.

This brief encapsulation of the fundamental points in Kant's phronomy suffices for us to put together the chief characteristics in Quantity required for our judicial Standpoint. First, in the synthesis of apprehension the representation of an objective (topological) space is co-generated with the representation of the appearance of a thing. The perceptible matter of this objective space is placed with representations of kinaesthetic feedback arising from motoregulatory expression, while that of the representation of the thing belong to the usual sensory modalities of receptivity. But the synthesis process of the pure intuition of space contains no judgment. Therefore, in the Quantity of teleological reflective judgment we require the composition of a motoregulatory act.

Second, the general concept of motion necessarily presupposes the on-going *construction* of not merely a topological "point in space" but of an *aggregation of points in time* that produces *topological neighborhoods* from the extensive magnitude of change in the representation of the kinaesthetic feedback data. Third, all motion is relative. The infant's earliest objective perceptions could not be expected to initially distinguish between a "spatial background" and a "thing in the foreground." Instead, we should expect a syncretic inability to distinguish, in the earliest experiences of life, between empirical space and the appearance of an empirical thing. But this is nothing other than Piaget's *Obs.OS*, and in the classic argument between Poincaré and Piaget (Chapter 17), Kant vindicates Piaget. More importantly, because empirical space is an object contained in the same intuition as the appearance of the thing, teleological reflective judgment is not faced with any requirement that it be able to distinguish between empirical space and the appearance of the thing. Thus, it can remain utterly non-cognitive in its judgments.

Finally, the judicial act of motoregulatory composition, as a product of the *Kraft* of teleological judgment, comes under the notion of causality in the direct sense of Kant's first maxim. But so far as the *ground of determination* of the act is concerned, teleological reflective judgment falls under Kant's second maxim. The overall activity is the union of the act of judgment and the action of a motoregulatory expression, and so in total we have the synthesis of the two maxims in one activity.

#### § 4.2 Dynamics

Kant's dynamics introduced an idea which, in the context of eighteenth century physics, was nothing less than radical. This was the Critical idea of a "moving power" (*bewegende Kraft*).

To be sure, the term *bewegende Kraft* did not originate with Kant. Leibniz previously employed such an idea as a *property* of matter. Leibniz' monads never had much influence over science and, apart from his independent invention of the calculus, Leibniz himself never contributed much to physics. Kant's moving power, on the other hand, **is physical matter** in the only way in which that *ontological* concept can have *any* Critical *real* meaning. It *defines* what is to be considered a point in space *and* it is non-localizable, thus is *and* is-not point-like.

It is obvious from a study of Kant's metaphysic that he was no Newtonian (and so physics in his day was not ready for his theory). Nowadays physicists often presume his metaphysic would have to be some kind of philosophical apology in *ex post facto* support of Newtonian physics. On the other hand, I think lack of in-depth training in physics has a bad influence on translating *Metaphysical Foundations of Natural Science* when it comes to using the language of physics. Granted that translation of highly technical ideas, especially when these ideas are radical, is quite difficult; even so, translation must preserve the ideas being presented, and I think the English translations of Kant's metaphysic have not entirely succeeded in this.

The concept of a "force" is fundamental in physics, and every English translation of Kant's metaphysic I have seen has rendered *bewegende Kraft* as "moving force" (and in fact this is a legitimate *possible* rendering; it is merely not a rendering that preserves Kant's idea). Kant's "moving power" is an idea that carries a connotation much closer to the modern idea of a "force field"<sup>1</sup>; but even this falls short of its full implication because "moving power" is an idea that can take in the wave function of modern quantum mechanics (which is also a kind of "field" but is not regarded as a "force field"). The *notion* of a moving power is that it is the cause of a motion [KANT15a: 210 (4: 497)]. This is the fundamental notion of Quality in Kant's dynamics.

Another clue that Kant is not an apologist for Newton is: the idea of a "corpuscle" is banished from his applied metaphysic of natural science. We could have anticipated this from the previous section on phoronomy. Calling a "material substance" a "corpuscle" is in effect the same as regarding it as a thing-regarded-as-it-is-in-itself, which is a transcendent idea lacking real

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<sup>1</sup> The idea of a force field had not yet occurred to eighteenth century physics. The principal credit for this idea can be arguably granted to Faraday (with his "lines of force") and, even more so, to Maxwell. Even today the idea of the electromagnetic field is one that the very brightest undergraduates in electrical engineering and in physics (those students who do not simply take these ghostly entities for granted and merely focus on the mathematics) find disturbing – an assault on their personal "metaphysic" of the world. Going beyond this idea to that of the quantum mechanical wave function is for some of these bright students so disturbing that I know some who leave physics for other disciplines, such as electrical or computer engineering, for this very reason. I personally found these ideas so ontologically occult that it took more than a decade of thinking about them and working with them before I felt comfortable about them. During this time the only thing that really kept up my faith in these ideas was that I saw them *work* reliably in my laboratory. They did not cease to seem occult to me until after I had studied the Critical Philosophy and Kant's metaphysic.

objective validity under the Copernican hypothesis. Indeed, one of the ontological consequences that Kant presents in the applied metaphysic is that all space-filling matter is, with some technical restrictions, to be regarded as a continuum. This directly contradicts the Newtonian ontology.

Kant begins his treatment of dynamics with an explanation of what it means for matter to “fill space”:

Matter is the movable so far as it *fills* a *space*. To *fill* a space means to resist every movable that endeavors through its motion to invade into a certain space. A space that is not filled is an *empty space* [KANT15a: 209 (4: 496)].

Kant points out that “to fill” a space is not to be regarded as being the same as “to occupy” a space. Occupying a space implies that something is immediately present everywhere in that space, but this idea, Kant points out, is indeterminate with regard to by what effect this presence is to be known. On the other hand, to “resist” the motion of another matter is definable in appearances:

Invasion into a space . . . is a motion. Resistance to motion is the cause of its diminution or even its change into rest. Now nothing can be combined with a motion that diminishes or cancels it except another motion of precisely the same movable in the opposite direction (phoronomy theorem). Therefore, the resistance that a matter renders in the space that it fills to all invasions by another [matter] is a cause of the motion of the latter in the opposite direction. But the cause of a motion is called a moving power [KANT15a: 210 (4: 497)].

In understanding this idea, we must call upon our earlier discussion of the idea of negative magnitudes. A motion is being resisted when its magnitude is changing in subjective time (a diminishing change). Such a change in magnitude requires opposition (in the *Entgegensetzung* sense), and “resistance” is the name given to the cause of this opposition.

This argument may seem a gossamer subtlety so far as our everyday encounters with objects is concerned. There is a book beside me on my desk; in appearance there seems to be no issue with saying that I can tell what space the book occupies, nor with my perception of it as occupying a very definite extension in space. For the physicist, however, closer examination turns up some telling complications, and the closer the examination the more complicated things become. Quoting Feynman:

To an excellent approximation of perhaps one part in [ten billion], the number of atoms in a chair does not change in a minute, and if we are not too precise we may idealize the chair as a definite thing; in the same way we shall learn about the characteristics of force, in an ideal fashion, if we are not too precise. One may be dissatisfied with the approximate view of nature that physics tries to obtain (the attempt is always to increase the accuracy of the approximation), and may prefer a mathematical definition; but mathematical definitions can never work in the real world. A mathematical definition will be good for mathematics, in which all the logic can be followed out completely, but the physical world is complex, as we have indicated in a number of examples, such as those of ocean waves and a glass of wine. When we try to isolate pieces of it, to talk about one

mass, the wine and the glass, how can we know which one is which, when one dissolves the other? The forces on a single thing already involve approximation, and if we have a system of discourse about the real world, then that system, at least for the present day, must involve approximations of some kind.

To begin with a particular force, let us consider the drag on an airplane flying through the air. What is the law for that force? . . . If we continue to study it more and more, measuring more and more accurately, the law will continue to become *more* complex, not less. In other words, as we study this law of the drag on an airplane more and more closely, we find that it is “falsar” and “falsar,” and the more deeply we study it, and the more accurate we measure, the more complicated the truth becomes . . .

There is another kind of friction, called dry friction or sliding friction, which occurs when one solid body slides on another. In this case a force is needed to maintain motion. This is called a frictional force, and its origin, also, is a very complicated matter. Both surfaces are irregular, on the atomic level. There are many points of contact where the atoms seem to cling together, and then, as the sliding body is pulled along, the atoms snap apart and vibration ensues; something like that has to happen. Formerly the mechanism of friction was thought to be very simple, that the surfaces were merely full of irregularities and the friction originated in lifting the slider over the bumps; but this cannot be, for there is no loss of energy in that process, whereas power is in fact consumed. The mechanism of power loss is that as the slider snaps over the bumps, the bumps deform and then generate waves and atomic motions and, after a while, heat, in the two bodies. . .

The same phenomenon can be observed in a simple home-made experiment with a flat glass plate and a glass tumbler. If the tumbler is place on the plate and pulled along with a loop of string, it slides fairly well and one can feel the coefficient of friction; it is a little irregular, but it is a coefficient. If we now wet the glass plate and the bottom of the tumbler and pull again, we find that it binds, and if we look closely we shall find scratches, because the water is able to lift the grease and the other contaminants off the surface, and then we really have a glass-to-glass contact; this contact is so good that it holds tight and resists separation so much that the glass is torn apart; that is, it makes scratches [FEYN3, Ch. 12: 2-5].

As it turns out, surface physics is one of the most difficult and complicated branches of study in all of modern physics. In fact, it proves to be impossible in the light of modern physics to say precisely “where” any physical body truly begins “to occupy space” or where it ends. It turns out that the classical corpuscular idea of “extension” cannot truly be scientifically defined by modern physics. Extension as “the space occupied by a body” is scientifically meaningless.

Using the foregoing discussion quoted above in his metaphysic, Kant deduced the first of several ontological theorems of dynamics:

Matter fills a space not through its mere *Existenz* but rather through a particular *moving power* [KANT15a: 210 (4: 497)].

Additional consequences follow from this first theorem. One we might have anticipated from our previous discussion of negative magnitudes is that two “types” (actions) of moving power must be recognized.

Power of attraction is that moving power by which a matter can be the cause of the convergence of others to it (or, what is the same, by which it resists the divergence of others from it).

Power of repulsion is that by which a matter can be the cause of others to move away from it (or, what is the same thing, by which it resists the convergence of others to it) [KANT15a: 211 (4: 498)].

We recall from the discussion of negative magnitudes that distinctions between “positive” and “negative” magnitudes can only be objectively valid through a Relation of community. Now *motion* is always in such a Relation because, as we saw in phoronomy, the concept of motion involves reciprocal (relative) relationships between a matter and an objective space. We can call the *magnitude* of the power of repulsion negative with respect to that of the power of attraction. But *power* of attraction and *power* of repulsion have different *implications* for the ontology of matter. Kant was able to deduce the following ontological theorems:

Matter fills a space through the repulsive powers of all its parts, i.e. through a power of expansion of its own that has a determinate degree, such that smaller or larger degrees can be thought *ad infinitum* [KANT15a: 211 (4: 499)].

The possibility of matter requires a power of attraction as its second fundamental power [KANT15a: 219 (4: 508)].

No matter is possible through mere power of attraction without power of repulsion [KANT15a: 222 (4: 510)].

These theorems speak only to space-filling matter, *not* the objective space said to be filled or empty. But note that *attractive power does not fill space*. It is the *non-localizable* in matter.

The power of repulsion and the power of attraction are both necessary for the possibility of the appearance of matter. The power of repulsion alone, if it were the sole moving power of matter, would by virtue of this lead to an expansion *ad infinitum* of the filling of space by the matter. Similarly, the power of attraction alone would, on the contrary, lead to the contraction *ad infinitum* of matter. Either result contradicts actual experience in appearances.<sup>2</sup> The action of a moving power can be hindered only by another moving power in opposition to it, and this is why both types of moving powers are required.

Space-filling matter has a sort of “elastic” character due to the opposition of effects in the power of attraction and power of repulsion. The extensive magnitude of a space-filling matter is a magnitude of aggregation in the composition of motions in phoronomy. Such a magnitude, which

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<sup>2</sup> It is the current judgment of astronomy that the universe is expanding. It is also the judgment of modern astronomy that the *rate* of this expansion is, at least at present, speeding up. At the same time, the galactic clusters do *not* appear to be expanding. These observations are consistent with Kant’s requirement for both types of moving powers. In explaining the expansion, astronomy feels compelled to make the hypothesis that the universe is filled with something called “dark energy.” This, if it exists, would be a type of “matter” under Kant’s definition, and this ontological hypothesis is in contradiction to Kant’s theorem. But if ‘dark energy’ is regarded as moving power, it is merely a dynamic in a system not in equilibrium. Furthermore, having two types of moving powers is consistent with the coexistence of “the dark power” and “gravity” regarded as a moving power. Finally, remember that determinations of “positive” and “negative” magnitude designations always require a reciprocal Relation of community.

depends on relationships between the space-filling matter and empirical space, can increase (extension) or decrease (compression).

Matter fills a space only through moving power (Theorem 1), and indeed one such that resists the invasion, i.e. the convergence, of others. Now this is a repelling power (Explanation 2). Therefore matter fills its space and, indeed, all of its parts only through repelling powers, for otherwise a part of its space . . . would not be filled but only enclosed. But the power of one's extensiveness in virtue of the repulsion of all its parts is a power of expansion [KANT15a: 211 (4: 499)].

Beyond every power of expansion a greater moving power can be found, but this can also work against that, whereby the latter would then decrease the space that this strives to enlarge, in which case the latter would be called *compressing* power [KANT15a: 212 (4: 500)].

Mechanical equilibrium implies balance between power of attraction and power of repulsion.

We have one last thing to cover, and that is the idea of the penetrable vs. impenetrable matter (the key idea of a corpuscle). How is this idea to be viewed in the applied metaphysic? We must first rule out mere displacement, i.e. driving a matter out of the empirical space it fills into another, for this in no way captures what was meant by the classical idea of penetration, which meant *breaking apart* matter into pieces [NEWT1: 270-271]. The Critical idea of penetration is one of abolishing the space-filling property of the movable in space (matter).

A matter *penetrates* another in its motion when it completely cancels the space of its extension through compression [KANT15a: 212 (4: 500)].

This is clearly an explanation not at all similar to the picture of one corpuscle cracking another apart. The penetration of matter, which calls not merely for diminution of the space it fills but its utter cancellation, is effectively the annihilation of the *Dasein* of that matter (not merely an alteration of its *Existenz*). Now, dynamically we must regard such an event as one in which a greater power of attraction is set up in the space-filling matter (through the actions of the power of repulsion of the penetrating matter), for only in this case can the change in the space-filling extension of the former be diminished. But what happens when the matter is compressed?

If its original power of repulsion remains unchanged or decreases in intensive magnitude after compression, or if its power of attraction increases thereby, there is nothing to stop the process of compression from proceeding all the way to complete annihilation of space-filling by the matter. Matter would prove a most ephemeral thing in this case. It would vanish at the slightest squeeze. Similarly, with the slightest outward tug matter would be launched into a space-filling expansion *ad infinitum* if its power of attraction decreased or its power of repulsion increased as its space-filling extension increased. Kant argued that a matter's power of repulsion must therefore *increase* as its space-filling extension decreases. A moving power has intensive magnitude (that is, a degree) and this can be *known* only by *approximation* to negation. But we

cannot *know* this negation is *utter*, i.e. that the *Dasein* of the matter is completely annihilated, because the mere inability to *sense* the presence of matter does not imply its utter absence. Thus,

Matter can be *compressed ad infinitum*, but can never be *penetrated* by a matter, however great the pressing force of the aforesaid may be [KANT15a: 213 (4: 501)].

In the corpuscular theory, the fundamental corpuscles as Newton saw them were thought to be absolutely impenetrable. This meant they could not be compressed at all. Kant called this idea “mathematical filling of space,” and nothing more than an occult quality, utterly inexplicable from fundamental principles and nothing but an unfounded hypothesis. In other words, the idea of Newtonian corpuscles is an idea with utterly no objective validity whatever.

Physical matter, under Kant’s metaphysic, is relieved of this corpuscular hypothesis.<sup>3</sup> It can be viewed with objective validity only as a moving power and only in terms of motion (*kinesis*). The mathematical description of matter under this ontology, if we had one, would be that of a pure field theory. The quantum mechanics comes somewhat close to this sort of description, although it still makes heavy use of corpuscular models and analogies today. However, I see nothing fundamental (except inconvenience and hard work) that would prevent its “particles” (fermions and bosons), from having their experimental properties recast in terms of “space-filling” and “attractive” properties – i.e. in terms of a pure field theory of moving powers.<sup>4</sup>

So much for our recap of dynamics from the theoretical Standpoint; now let us turn to the judicial Standpoint. The idea of a moving power is a great unifier of physical theory, but it is still an idea with a supersensible for its Object. No one category of understanding contains this idea; where, then, does it come from in the power of judgmentation?

Here we recall Piaget’s findings on the origin of ideas of causality in young children. As we have seen, the child’s earliest causal explanations are not physical but, rather, “intentional.”

The child fills the world with spontaneous movements and living “forces”; the heavenly bodies may move or rest as they please, clouds make wind by themselves, waves “raise” themselves, trees swing their branches spontaneously to make a breeze, water flows in virtue of a force residing in it. In short, all movement is conceived of by means of pre-notions and pre-relations. It is life and will, activity and spontaneity. It is therefore much more than what can be seen of it by direct perception .

The most general characteristic of these primitive explanations of movements given by children is what may be called their bipolarity: the movement of a body is regarded as due both to an external will and to an internal will, to a command and an acquiescence. The starting point of these ideas is both artificialist and animistic. If we go back further still, we may say that this bipolarity is

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<sup>3</sup> Likewise, it is no longer *necessary* to make the hypothesis of the existence of the void.

<sup>4</sup> That Kant’s metaphysic had the phenomenon of gravity in mind is probably obvious to you from the thumbnail sketch provided here. However, Kant also discussed other phenomena – density of materials, friction, chemical reactions, cohesion and surface tension – as applications. The *Metaphysical Foundations* is physical ontology, not physics itself. But it has implications for physics, which Chapter 24 will discuss.



originally of a magico-animistic order: on the one hand, we issue commands to things (the sun and moon, the clouds and the sky follow us), on the other hand, these things acquiesce in our desires because they themselves wish to do so [PIAG8: 114-115].

ANT (8): “*When you breathe, the air comes into the mouth; when you blow it comes out of the mouth again. – Where is this breath? – In the stomach – Why? – Because we must have air . . . When you breathe, the breathing attracts the air*” [PIAG8: 56].

FRAN (9, backward): “*Does the sun move? – Yes. – Why? – Because it wants to make strong sunshine. – Why? – Because sometimes there are ladies and gentlemen who are going for a walk and they are pleased when it is fine. – Does the sun see them? – Yes. – How does it move along? – Because of the clouds. Sometimes they push the sun, because sometimes the clouds move along. That makes the sun move too. – When there are no clouds, what does the sun do? – Sometimes it looks at us; then sometimes it follows us*” [PIAG8: 77].

We can distinguish three periods in the evolution of law in the child. Each of these is characterized by the peculiar relationship in which generality and necessity stand to one another. During the first, generality is non-existent; as to necessity, it is purely moral, physical determinism not having been separated from the idea of social obligation. During the second period, these two types of necessity are differentiated, and generality comes into being. During the third period, generality is established, and physical determinism is accompanied by logical necessity, which is the last term in the evolution from moral necessity.

The first period lasts till about the age of 7-8. During this time there are no natural laws. Physical and moral determinism are completely confused with each other. More exactly, any law observed to hold among external objects is regarded as a social law, and things are believed to behave in accordance with rules that are imposed on them from outside . . . Before the age of 7-8 we found no example of movement regulated by purely physical laws. There are always two kinds of motors which ensure the movement, thanks to their collaboration: an internal motor, and an external motor, which is at first man himself, and then certain other bodies which play the part of masters or of more vigorous enemies (such as the sun driving away the clouds and the night summoning them) [PIAG8: 273-274].

For each of us the system of Nature begins with such early constructs. Although these initial structures in the manifold of concepts undergo great accommodation and re-arrangement with the march of experience, adaptation is structure-preserving (otherwise there is no *system*). With no copy-of-reality mechanism and no innate object-concepts, the basis for the formation of the earliest objective structures can rely upon nothing else than the non-cognitive assessments of the process of reflective judgment.

Now, *Lust per se* is the *Kraft* (moving power) of adaptive *psyche*, and we have seen that in it there are two types: *Lust* (a “power of attraction”) and *Unlust* (a “power of repulsion”). The conscious presentation of these are feelings (of *Lust* and of *Unlust*), which are reciprocal opposites in terms of intensive magnitude. However, these feelings are merely “energetics” and not to be regarded as the efficient cause of any action expression. For this a *teleological* act of judgment is needed as matter of the matter of expression (Quality in teleological judgment). While Quantity in teleological judgment pertains to composition of the motoregulatory capacity for expression, Quality in this context can pertain to nothing else than a relationship to the practical capacity of judgmentation – that is, to the appetitive power of practical Reason through a

manifold of Desires. Regarded as cause of *kinesis* in motoregulatory actions of the Organized Being, such teleological judgments (in Quality regarded as a moving power) are easy to name. They are judgments of **well-being** and **ill-being**. Such kinds of judgments are nothing else than judgments of formal expedience for the Objects of pure practical Reason (i.e., good and evil).

As judgments rendered on the conscious state-of-being, these judgments take into expedience all perception at a moment in time, including expedience vested in the represented intuition. Because the child's initial constructs of causality are predicated on psychological causality, the inference of moving powers in external objects (things) follows as nothing other than a mere inference of analogy in reflective judgment.

### § 4.3 Mechanics

In the phoronomy and the dynamics Kant built up the ontological explanation of physical matter, first in regard to Quantity, then in regard to Quality. He continued this building process in the mechanics:

Matter is the movable so far as it, as such, has moving power.

This is now the third definition of matter. The merely dynamical concept could regard matter also as at rest; the moving power brought up in consideration there had merely to do with the filling of a certain space, without the matter filling it needing to be seen as itself moved. The power of repulsion was therefore an originally-moving power for *imparting* motion; in mechanics, by contrast, the power of a matter set in motion is regarded as *communicating* this motion to another. But it is clear that the movable would have no moving power *by means of its motion* if it did not possess originally-moving powers, by which it is active in every place where it is found, prior to any inherent motion of its own . . . Thus all mechanical laws presuppose dynamical laws, and a matter, as moved, can have no moving power except by means of its power of repulsion or attraction, on which and with which it acts immediately in its motion, and thereby communicates its own inherent motion to another [KANT15a: 245 (4: 536-537)].

Moving power as the Quality of physical matter is the cause of motion (a “what”). But because matter “as such” possesses this Quality, in its physical *nexus* with other matters its possession of moving power is seen as a ground of causality (causality being an idea of a “how”). Put another way, we know of the *Dasein* of a physical matter only through the connection of its motion to effects on the motion of other matters. In other words, moving power is known through *external* Relations in *Existenz* (i.e. through accidents of appearance) and not from any *internal* Relation of a thing in its inner determinations. We have indeed encountered this discussion previously when we dealt with the *Realerklärung* of the *Kraft* of a substance in general. But by what sort of accident of appearance do we know physical matter?

Kant tells us that the answer to this question is: *by its quantity of motion*. But his explanation of this idea is very different from Newton's. He begins by defining some familiar-sounding terms.

The *quantity of matter* is the amount of the movable in a determinate space. So far as all its parts are regarded as active (moving) together in their motion, it is called *mass*, and one says that matter *acts in mass* when all its parts, moved in the same direction, *together* exert their moving power externally. A mass of determined figure<sup>5</sup> is called a *body* (in mechanical sense<sup>6</sup>). The *magnitude of motion* (mechanically appraised) is that which is appraised by the quantity of the moved matter and its velocity together . . .

(Theorem 1): The quantity of matter, in comparison with *every* other, can be appraised only through the quantity of motion at a given velocity [KANT15a: 246 (4: 537)].

Newton defined “quantity of matter” as “the measure” of matter and defined the term “mass” to mean this quantity. Considering that Kant gave as the mechanical definition of matter “the movable,” his quantity of matter (*Quantität der Materie*), as “the amount of the movable,” is *logically* equivalent to Newton’s definition; it differs *ontologically* in that for Newton matter meant corpuscle, whereas for Kant it means possession of moving power. Kant’s “magnitude of motion” (*die Größe der Bewegung*) also bears a strong logical resemblance to Newton’s “quantity of motion.” For Newton, quantity of motion is mass times velocity<sup>7</sup>, and this is the same as for Kant’s magnitude of motion (other than for the ontological difference in what each man means by “mass”). Velocity for both men means “speed and direction.”

But what does Kant mean by “quantity of motion” (*die Quantität der Bewegung*)? In one of those famous omissions of his, Kant declines to spell out the distinction he draws between *magnitude* of motion and *quantity* of motion in the *Metaphysical Foundations*. When reading one of Kant’s books, it often seems to me Kant took it for granted that his readers had all taken his course in metaphysics, for there we find,

Should the combination involve the concept of magnitude, then the concept of homogeneity fundamentally underlies it, and the concept of magnitude is itself determined by the word *quantum*: it is the one from the conjunction of the homogeneous many. It therefore contains essentially

(1) multitude: thus, what is looked upon as unity cannot be called quantum.

(2) homogeneity, i.e. things of one and the same genus (*genus*), thence composite differs from quantum, and the many would in that case be able to be a variety; every quantum holds together a multitude, however not every multitude is a quantum but only when the parts are homogeneous.

Now that determination of a thing through which one knows a *Sache*-thing as a quantum is *quantity* or *magnitude*. . . Formally, quantum is a manifold in representation that is homogeneous, and the determination of the manifold as quantum is quantity [KANT19: 459-460 (29: 991)].

Put more simply, quantity in the present context is the schema (determination) of the magnitude. Quantity as pure schema of extensive magnitude is number, and from this we can conclude that

<sup>5</sup> The word Kant used here was *Gestalt*. The “determined figure” is the form in outer sense of its appearance in intuition.

<sup>6</sup> I.e., in the physical context of the appearance of a thing.

<sup>7</sup> Physics nowadays calls this product the “linear momentum” of a thing.

quantity of motion is the *determination of the magnitude of motion as a number*.<sup>8</sup> This is what is meant by an **amount**. A magnitude, of course, is a unity that contains a multiplicity, and so magnitude of motion is physically that which is regarded as *one* object (i.e., not “mass times velocity” but simply “momentum”). Quantity of motion is the *determination of the amount of momentum*. For Newton quantity of motion is whatever it is regardless of whether or not anyone is observing it. For Kant *it is nothing until we determine it*. Magnitude of motion is an ontological object of a concept (an idea); quantity of motion is the Object.

The importance of this is due to the very different nature of Kant’s quantity of matter. For Newton the mass of a body can be directly measured *in units of a standard*<sup>9</sup> by means of, for instance, a spring scale. This is because matter is taken to be composed of corpuscles and its mass is therefore independent of the velocity of the body.<sup>10</sup> For Kant, on the other hand, ontological matter is regarded as a moving power, which can only be known through motions, and therefore “amount of matter” is *never* independent of the *act of observation* determining it.

As far as the concept of mass in this same explanation is concerned, one cannot take it for the same as that of quantity in the customary way<sup>11</sup> . . . It is to be noted . . . that the quantity of matter is the *quantity of substance* in the movable, and thus not the magnitude of a certain quality of the same (the power of repulsion or attraction that are cited in dynamics), and that the quantum of substance here means nothing else but the mere amount of the movable that constitutes matter. For only this amount of the moved can yield, at the same velocity, a difference in the quantity of motion. But that the moving power a matter has *in its own* motion alone gives evidence of the quantity of a *substance* rests on the concept of the latter as the ultimate *subject* in space (which is in turn no predicate of another), which for precisely this reason can have no other magnitude than that of the amount of the homogeneous outside one another [KANT15a: 248-249 (4: 540-541)].

The magnitude of a moving power is an *intensive magnitude*, whereas the idea of mass is an idea of *extensive* magnitude (in composition of members of a homogeneous aggregate in space). Thus, “amount of mass” is not the same as “degree of moving power.” I have previously employed “mass” as an exemplar for a supersensible object; putting together Kant’s remarks above, mass is *the quantum of substance moving together*, but substance is a *notion* of the Relation of persistence in time and is knowable only through the accidents of appearance its causality determines.

At this point in the discussion, I suspect that at least some readers may be beginning to feel a bit bewildered. After all, the concept of a “particle” – of matter as solid little nodules of what a

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<sup>8</sup> Recall that *number* is the successive addition of units of measure. From our previous discussion of negative magnitudes, the synthesis of number implies a composition of non-canceling magnitudes.

<sup>9</sup> One kilogram of mass has been defined to be the mass of a particular platinum cylinder carefully preserved at the International Bureau of Weights and Measures near Paris. This cylinder is called *the standard kilogram*.

<sup>10</sup> One of the more surprising consequences of Einstein’s special theory of relativity was that mass can *not* be independent of velocity. Modern physics today speaks of the *rest mass* of a body – the mass with respect to the standard kilogram as measured by an observer for whom the velocity of the body is zero.

<sup>11</sup> The “customary way” is, of course, Newton’s procedure.

poet once called “sweet-damn-all” – is one of the basic realist concepts all human beings seem to construct. But Kantian physical matter is not a particle, not a corpuscle, **it is not even localizable in terms of a uniquely-definable region of mathematical space described by independently-defined points of classical geometry.**<sup>12</sup> Kant’s ontology calls for a rather intimidating *relativistic field theory*. For the benefit of those of us who are not physicists, let us quote Feynman again:

You may not like the idea of action at a distance. How can this object know what is going on over there? So there is another way of stating the laws, which is very strange, called the field way. It is hard to explain, but I want to give you some rough idea of what it is like. It says a completely different thing. There is a number at every point in space (I know it is a number, not a mechanism: that is the trouble with physics, it must be mathematical<sup>13</sup>), and the numbers change when you go from place to place. If an object is placed at a point in space, the force on it is in the direction in which the number changes most rapidly (I will give it its usual name, the potential; the force is in the direction in which the potential changes). Further, the force is proportional to how fast the potential changes as you move. That is one part of the statement, but it is not enough, because I have yet to tell you how to determine the way in which the potential varies [FEYN2: 50-51].

To fully understand the physicist’s idea of a field requires a rather high level of training in mathematics, and we will not digress into that here. It is fair to say that in Kant’s day mathematics was not yet up to the task. Maxwell, more than anyone else, developed this idea for physics in the mid-nineteenth century. A *general* relativistic field theory is still not in our grasp.

Even if many of the readers of this treatise are not familiar with the field idea, I think we are nonetheless in a better position now to appreciate Kant’s first theorem of mechanics. Because the ideas of matter and mass have the non-local character of a field, an important issue ensues in how “quantity of matter” must be measured and determined. Kant’s theorem says that this can only be done by an appraisal of the quantity of motion; but due to considerations of phoronomy any such determination must take into account the *entire action* (effect) one substance has on the motion of *every other* substance **and** on the determination of empirical space. This is a very daunting task even for the best-trained physicist, but metaphysically this is what is required. It is worthwhile to note here that this conclusion is more or less the same that has been reached by modern physics (that is, by quantum mechanics and quantum field theory; we still lack the linkage between quantum theory and general relativity). Anything less is only an approximation in Reality.

We next turn to Kant’s second ontological theorem:

*First law of mechanics* – With all changes of corporeal nature, the quantity of matter remains, on the whole, the same, unincreased and undiminished [KANT15a: 249 (4: 541)].

<sup>12</sup> Motion describes space and moving power is the cause of motion; thus matter and space-time are co-determined in Kant’s ontology of physics. Ontological matter, not geometry, *defines* what is a real point.

<sup>13</sup> Feynman’s audience was made up of non-physicists, and they wanted to hear an explanation of gravity in terms of its “mechanisms.” Feynman is apologizing for not being able to give them anything but a mathematical explanation.

This is a conservation law, namely conservation of matter and energy.<sup>14</sup> The first ground of this law is the first Analogy of Experience in Rational Physics, which holds that substance neither arises nor perishes (and recall that substance is the notion of the *Dasein* of an object as that which is persistent in subjective time). Kant's task with this first law is to establish what substance shall be taken to be in physical matter. Kant's deduction of this theorem basically argued that quantity of matter cannot increase or diminish without a new substance being created or an old one being annihilated. But this violates the first Analogy of Experience, and so the theorem follows. *Accidents of appearance* do *not* fall under this law because an accident pertains to *Existenz*, but the notion of substance pertains only to *Dasein*. Creation or annihilation of a *substance* cannot be an object of any possible experience but transformation of appearances *can*. Furthermore, vanishing of the appearance of a thing at *one* place in empirical space does not imply annihilation of its matter at *every* place in empirical space because matter must be regarded as non-local.

Kant also remarked,

What is essential in this proof characterizing *substance* that is possible only in space and in accordance with its conditions, and thus possible as object of the *outer* senses, is that its magnitude cannot be increased or diminished without substance arising or passing away; for because all magnitude of an Object possible merely in space must subsist in *parts external to one another*, these, if they are real (something movable) must therefore necessarily be substances. By contrast, that which is regarded as object of inner sense can have a magnitude, as substance, which *does not subsist in parts external to one another*; hence its parts are not substances; hence their arising or passing need not be the arising or passing of a substance; hence their augmentation or diminution is possible without prejudice to the fundamental law of the persistence of substance [KANT15a: 250 (4: 542)].

Something such as “consciousness” or “*Lust*” when regarded as an object is an object of inner rather than outer sense, is therefore not “physical matter,” and consequently does not fall under Kant's first law. A “physical object” on the other hand is a composition in aggregation, has extensive magnitude, and this makes all the difference, ontologically speaking.<sup>15</sup>

The conservation law is grounded in the first Analogy of Experience. From the second Analogy comes the Kantian counterpart of Newton's first *and* second laws:

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<sup>14</sup> “Conservation of matter and energy” is the term commonly used for this conservation law today. Prior to Einstein, there were two laws: conservation of matter and conservation of energy. However, these became united under Einstein's famous equation,  $E = mc^2$ , and in this sense the terms “matter” and “energy” are pragmatically interchangeable today in physics. Kant's “quantity of matter” does not distinguish between them.

<sup>15</sup> One of the more interesting ideas in quantum electrodynamics is that of “virtual photons.” They are said to be “not in the real state” and are allowed to violate conservation of energy provided they do so within time limits imposed by Heisenberg's uncertainty principle. I think Kant would call them a moving power (a Quality of matter), thus their magnitude would be merely intensive magnitude, and thus they would be allowed under his first law of mechanics, i.e. they would not be in violation of the ontological theorem.

*Second law of mechanics:* Every change of matter has an outer cause [KANT15a: 251 (4: 543)].

This law governs changes in motion *regarded as changes in the state of motion*, i.e. regarded as appearances in accidents of motion. The key phrase in this ontological theorem is “outer cause.”

Matter, as mere object of the outer senses, has no determinations except those of outer relationships in space, and therefore undergoes no changes except through motion. With respect to this, as fluctuation of one motion into another, or of the same into rest or conversely, a cause must be found (according to the principle of metaphysics). But this cause cannot be internal because matter has no essentially inner determinations and grounds of determination. Hence, every change of a matter is based on outer causes [KANT15a: 251 (4: 543)].

Kant’s statement, that matter has no “essentially inner determinations and grounds of determination,” might seem startling at first until we remember we *know* that which is called physical matter only through appearances of motion. This is an entirely *outer* phenomenon and gives us no window to “peer inside” matter. If we seek for an efficient cause of a change in the state of matter, we must look solely to appearances in outer relationships. This, too, is why “life” is not an idea that can be attributed to “dead matter” (physical matter of outer appearances):

This mechanical law must alone be called the *law of inertia (lex inertiae)*; the law of an equal and opposite reaction for every action cannot bear this name. For this says what matter does, but the former only what it does not do, which is more appropriate for the term *inertia*. The inertia of matter is and means nothing else than its *lifelessness* as matter regarded as it is in itself. *Life* is called the capacity of a *substance* to determine itself to act from an *inner principle*, of a *finite substance* to determine itself to change, and of a *material substance* to determine itself to motion or rest as change of its state. Now we know of no other inner principle of a substance for changing its state except *desire*, and in general no other inner activity at all except *thinking*, together with that which depends on it, the *feeling* of *Lust* or *Unlust*, and appetite or will. But these grounds of determination and acts in no way belong to representations of the outer senses, and so neither to the determinations of matter as matter. The law of inertia says this and nothing more [KANT15a: 252 (4: 544)].

A moment ago I said, “*if* we seek for an efficient cause of a change.” Yet Kant’s second law of mechanics is not qualified by an “*if*”; it is categorical in saying any change of state *has* a cause (and an outer one at that). There is no trace of the skepticism of Hume in this ontological theorem. The “causality problem” has been a philosophical issue in the interpretation of Kant among Kant scholars (and critics) practically from the beginning. Friedman has given a particularly well-balanced account of this issue.<sup>16</sup> It is one to which we shall return after finishing this overview of Kant’s mechanics.

Kant’s last ontological theorem of mechanics is the Kantian counterpart to Newton’s third law: reciprocity of co-existing substances. Its ground is the third Analogy of Experience.

*Third mechanical law:* In all communication of motion, action and reaction are always equal to one

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<sup>16</sup> M. Friedman, “Causal laws and the foundations of natural science,” in [GUY: 161-199].

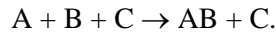
another [KANT15a: 252 (4: 544)].

Motion of a thing is an outer relationship between the thing and a relative objective space. But all knowledge of the *Dasein* of matter stems from the effects of moving powers, which can only be known through interactions in outer Relations. All substances in space *coexist* in time (thereby falling under the principle of community according to the third Analogy in Rational Physics). There are no objective spaces other than empirical ones, in which all motion is relative. Therefore any *action* of a matter at a moment in time (which is known only through changes in motion) can equally be regarded as a *reaction* of the matter to communication of the moving power of another. We are, therefore, in no position to give precedence to *one* of these physical matters – calling *it* the efficient cause – without equally well being able to claim that it is the *other* physical matter that is the efficient cause. If we say that a physical matter *A* acts through its power of repulsion on another matter *B*, we can make an equal claim that it is *B* acting to repulse *A* through *its* power of repulsion. If absolute *objective* space existed, we might be able to make a valid distinction, but the idea of an absolute objective space is wholly without objective validity. Therefore, there is nothing left for us but to represent the situation as one of *mutual* causes with *reciprocal* effects on motion, and this is what the third ontological law of mechanics says.

At this point I think it is needful to reiterate that, despite the name “mechanics,” Kant’s theory applies in general to physical *kinesis* of every kind, and not merely to what physics today calls “classical mechanics.” Let us therefore look briefly at something that at first blush might seem to offer a direct counterexample in experience to Kant’s third law of mechanics, namely the action of a chemical *catalyst*. Chemistry defines a catalyst as “a substance which when added to a reaction mixture changes the rate of attainment of equilibrium in the system without itself undergoing a permanent chemical change.” In high school chemistry this is often abbreviated to, “A catalyst is a chemical that causes a chemical reaction without taking part in that reaction.” If this high school version were correct, a catalyst would appear to be a cause that does not suffer a reciprocal reaction, in violation of Kant’s law. But the high school version of the definition is actually an incorrect statement, and the word “permanent” is crucial in the official definition.

Catalysts are thought to work through one of two mechanisms. In the first, the catalyst forms an intermediate compound during the chemical reaction; this compound breaks down later and the catalyst is recovered. In the second, the catalyst acts through a mechanism called “adsorption.” (I will discuss only the first case; the argument is not much different for the case of adsorption and leads to the same conclusion). In a simplified chemical formula where we have compounds *A*, *B*, and *C* (*C* being the catalyst), the reaction might often be written in abbreviated form as





However, this formula only gives us the initial and final states and omits an intermediate state, e.g.



In other words, the catalyst *does* “take part” in the reaction (undergoes *kinesis*). The intermediate product, AC, is sometimes called an “enzyme substrate” when the catalyst is an enzyme. A laboratory example of this is the hydrolysis of *p*-nitrophenyl acetate to make *p*-nitrophenol. A catalyst used for this reaction is chymotrypsin, which forms an acetyl-enzyme intermediate on the way to the final state.<sup>17</sup>

Now, what does all this look like from the judicial Standpoint? The special *objective* character of the process of teleological reflective judgment is that its acts result in the construction of a *structured* system of Nature. A structure is a system of transformations with self-regulating laws such that no new element engendered by the operation of these transformations breaks down the boundaries of the system and the transformations do not involve elements from outside the system except as aliments of assimilation. Teleological judgments *form laws*, although, of course, *objective* laws are by-products from acts of determining judgment. What teleological judgment does is “feed” the process of determining judgment through the formation of those intuitions marked as formally expedient.

But what is a “law”? More to the point, what does a law *do*? Clearly a law is a *rule* of some sort, and in general

A rule is an assertion under a general condition [KANT8: 126 (9: 121)].

Kant used the English word for “assertion” in this definition, which is usually a clue that he has something more in mind than the common meaning of the word. In its normal usage “assertion” means something affirmed positively, e.g., “The car is low on fuel.” But this is not quite what Kant means here.

All possible appearances belong, as representations, to the whole possible state of self-consciousness. But from this, as a transcendental representation, numerical identity is inseparable

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<sup>17</sup> For a reference see L. Stryer, *Biochemistry*, 4<sup>th</sup> ed., NY: W.H. Freeman & Co., 1995, pp. 222-223.

and certain *a priori*, because nothing can come into cognition except by means of this original apperception. Now since this identity must necessarily enter into the synthesis of all the manifold of appearances so far as they are to become empirical cognition, appearances are thus subject to *a priori* conditions with which their synthesis (of apprehension) must be in thoroughgoing accord. Now, however, the representation of a general condition in accordance with which a certain manifold (of whatever kind) *can* be set up is called a *rule*, and if it *must* be so set up, a *law*. All appearances therefore stand in a thoroughgoing connection according to necessary laws, and hence in a *transcendental affinity*, of which the *empirical affinity* is the mere consequence [KANT1a: 235-236 (A: 113-114)].

As an “assertion” a rule is what is “set up” in a manifold (of concepts, of Desires, in an intuition, etc.) whenever the general condition *for making* this “assertion” is encountered. There is what we might call a “subjective necessity” in the make up of an empirical rule, namely that the rule must be formally expedient for pure practical Reason. If there is also an *objective* necessity – that is, if the form of the rule must be set up in some one particular way or else a logical contradiction in the manifold of concepts results – then the rule is a *law*.

Now, determining judgment, acting in free play with the power of imagination, makes objective rules, and so far as the form of the manifold of concepts is concerned its categories are laws of understanding. Thus, for example, the cause must come before the effect in subjective time. But determining judgment does not set up the conditions for its synthesis of conceptual rules. It subsumes under a *given* general concept. The conditions under which it operates are established by the process of reflective judgment and its *mode* of operation is directed by speculative Reason. This subjective factor of holding-to-be-binding in reflective judgment, that renders an intuition as what we can justly call a *belief of the moment*, is such that if we lacked it then thinking would have all the rigidity and lack of intelligence of a computer program. What I will here call the *power of belief through reflective judgment* at one and the same time helps to orient thinking and provides self-regulation to the transformations of concepts effected in the process of determining judgment. We could not, for example, think through both sides of an issue and select one view over another without the degree of freedom in thinking that reflective judgment provides.

Hume saw this quite clearly.

The idea of an object is an essential part of the belief of it, but not the whole. We conceive of many things which we do not believe. In order then to discover more fully the nature of belief, or the qualities of those ideas we assent to, let us weigh the following considerations.

‘Tis evident that all reasonings from causes or effects terminate in conclusions concerning matters of fact; that is, concerning the existence of objects or of their qualities. ‘Tis also evident that the idea of existence is nothing different from the idea of any object, and that when after the simple conception of any thing we wou’d conceive it as existent, we in reality make no addition to or alteration on our first idea . . . But as ‘tis certain there is a great difference betwixt the simple conception of the existence of an object and the belief of it, and as this difference lies not in the parts or composition of the idea, when we conceive it, it follows that it must lie in the *manner* in which we conceive it.

Suppose a person present with me, who advances propositions to which I do not assent, *that Caesar dy'd in his bed, that silver is more fusible than lead, or mercury heavier than gold*; 'tis evident that, notwithstanding my incredulity, I clearly understand his meaning and form all the same ideas which he forms. My imagination is endow'd with the same powers as his; nor is it possible for him to conceive any idea which I cannot conceive, or conjoin any which I cannot conjoin. I therefore ask, Wherein consists the difference betwixt believing and disbelieving any proposition?

. . . 'Tis confest, that in all cases, wherein we dissent from any person, we conceive both sides of the question; but as we can believe only one, it evidently follows that the belief must make some difference betwixt that conception to which we assent and that from which we dissent. We may mingle, and unite, and separate, and confound, and vary our ideas in a hundred different ways; but 'till there appears some principle, which fixes one of these different situations, we have in reality no opinion: And this principle, as it plainly makes no addition to our precedent ideas, can only change the *manner* of our conceiving them.

. . . Our ideas are copy'd from our impressions<sup>18</sup>, and represent them in all their parts. When you wou'd any way vary the idea of a particular object, you can only increase or diminish its force and vivacity. If you make any other change on it, it represents a different object or impression . . . So that as belief does nothing but vary the manner in which we conceive any object, it can only bestow on our ideas an additional force and vivacity. An opinion, therefore, or belief may be most accurately defin'd, A LIVELY IDEA RELATED TO OR ASSOCIATED WITH A PRESENT IMPRESSION [HUME1: 94-96].

This “force and vivacity” of which Hume speaks is an *affective expression*. It adds nothing to the concept of an object except an attitude of holding-to-be-true or holding-to-be-untrue. Thinking constructs our object, but teleological reflective judgment grants us the Object of the object, and does so merely from a subjective rule on a subjective ground of holding-to-be-binding. An empirical law is an object in the particular under that general Object we call Law.

That nature should direct itself according to our subjective ground of apperception, indeed even depend on this in regard to its lawfulness, may well sound quite preposterous and strange. But if one considers that this nature is nothing in itself but an embodiment of appearances, hence no thing in itself but merely a multitude of representations of the mind, then one will not be astonished to see that unity, on claim of which alone it can be called an Object of all possible experience, i.e. nature, solely in the radical capacity of all our cognition, namely transcendental apperception, and for that very reason we can know this unity *a priori*, hence also as necessary, which we would certainly have to abandon if it were given *in itself* independently of the primary sources of our thinking [KANT1a: 236 (A: 114)].

I think many of the controversies that have sprung up around the interpretation of Kant's theory can be traced back to a lack of appreciation of the central role non-cognitive teleological judgments play in the synthesis of *objective* empirical laws, and to a certain lack of distinction between what is meant by Nature vs. what is meant by World. Friedman provides an excellent description of the historical difficulty in the interpretation of Kant's theory:

In spite of its many advantages, however, the strong separation of empirical causal laws from the transcendental principle of causality maintained by the preceding interpretation does not cohere at all well with much of what Kant explicitly says in the Transcendental Analytic.

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<sup>18</sup> In the Critical Philosophy we say that our ideas are built from our concepts of experience, but built in accordance with the Ideal of a complete system of Nature.

Indeed, although Kant explicitly and carefully distinguishes the universal transcendental principles of the understanding from particular empirical laws of nature in the Transcendental Analytic, he is just as explicit in his claim that particular empirical laws are somehow made possible – are grounded in or determined by – the transcendental principles. And it is clear, in addition, that it is precisely in virtue of this kind of grounding that even empirical laws too somehow count as necessary.

Now, if particular laws of nature are somehow grounded in or made possible by the transcendental principles of the understanding, it follows that even empirical laws too must have more than merely inductive status. The explicit discussion of induction in the Second Analogy is especially relevant to this issue . . . Neither the universal causal principle nor any particular causal law falling under it has merely inductive status, for both cases are characterized by a necessity and a [strict] universality that no merely empirical considerations can explain.

The rule of uniformity according to which illuminated bodies happen to become warm is at first merely empirical and inductive; if it is to count as a genuine law of nature, however, this same empirical uniformity must somehow be subsumed under the *a priori* concept of causality, whereupon it then becomes necessary and strictly universal. It would appear, therefore, that the principle of causality makes experience possible precisely by somehow injecting necessity (and thus strict universality) into particular causal laws.

The upshot of these considerations is that particular causal laws, for Kant, have a peculiar kind of mixed status: They result from a combination of inductively observed regularities or uniformities with the *a priori* concept [and principle] of causality. Insofar as particular causal laws merely record observed regularities they are contingent and *a posteriori*; insofar as they subsume such regularities under the *a priori* principle of causality, however, they are necessary – and even, in a sense, *a priori*. . . . It follows that Kant recognizes at least two distinct types of necessity [and thus apriority]. The transcendental principles of the understanding are absolutely necessary and *a priori*: they are established entirely independent of all perception and experience. Empirical laws that somehow fall under these transcendental principles are then necessary and *a priori* in a derivative sense. They, unlike the transcendental principles themselves, indeed depend partially on inductively obtained regularities (and thus on perception), yet they are also in some sense grounded in or determined by the transcendental principles and thereby acquire a necessary and more than merely inductive status.

What has made the problem so difficult, however, is that we are left quite in the dark concerning the precise nature of this “grounding.” *How* do the transcendental principles inject necessity into empirical laws of nature so as to secure them a more than merely inductive status? *How* do judgments that merely record observed regularities or uniformities become truly and “strictly” universal via the addition of the concept of causality? The unfortunate fact is that Kant does very little to explain – or even to illustrate – this crucially important relationship between transcendental principles and empirical laws of nature in either the first *Critique* or the *Prolegomena* [GUY: 170-175].

In my view, the crucial factor that has been missing from the debate is the clear recognition that, in any discussion of Nature, we cannot leave out the Organized Being whose Nature it is. Nature and world are not the same thing, and my “real world” almost certainly is different in some parts from your “real world” – in other words, I have a different world-model than you do. As soon as we refuse to sever the Organized Being from Nature, there then enters into all these considerations of which Friedman speaks the consideration that, when there is an Organized Being involved, there are *two* principles of transcendental causality – one for determining judgment and one for pure practical Reason. The first is the principle of *physical* causality. The other is the causality of freedom (or, what is the same, *psychological* causality). The necessity

and universality “injected into” merely empirical laws is *necessity for the Organized Being*, as a necessity for the purpose of satisfying the equilibrium demanded by the categorical imperative of pure Reason, and the “universality” is “universal” by dint of the fact that acts of reflective judgment produce, by their effects on the free play of determining judgment and imagination, an intelligible “universe” – i.e. Nature. Empirical laws are not objectively necessary by dint of the categories of understanding; *the context of their forms* are *necessitated* under the principle of the formal expedience of Nature – a merely *subjective* necessity through teleological reflective judgment, the acts of which must reconcile physical causality and the causality of freedom in *one* system of Nature (in which the Organized Being comes to regard its Self as an object among objects). In the Organized Being model understanding is a state-of-being, attained through judicial processes. It is an *outcome* of a process of judgmentation, and the character of human understanding is set up as a system of empirical rules, some of which carry in reflective judgment the *conviction* of a law.

The Critical Philosophy is unappealing to those who wish to know some “reality” and some “universe” beyond what we *can* know with objective validity from Critical epistemology. Such a dedication to what I tend to regard as a Hegelian pursuit is not wholly unlike the kind of dedication that goes into the religious conviction of an evangelist striving to abolish faith in God (a conviction of opinion, in the terminology of this treatise) and replace it with a dogma of belief (where the expression of any doubt is to be condemned). It seems to me God must cherish faith over belief, else we could all be prophets. That the interplay of reflective and determining powers of judgment means there are boundaries to the certainties of human knowledge makes the world a more interesting place. It makes science, which must always be dubitable, an enormously more interesting occupation so long as hubris is not a by-product of the endeavor.

Now, the applied metaphysic of Nature is an ontological doctrine taking the ground of its necessity from the principles of knowledge – that is, from the Critical requirement that our concepts and ideas of objective Nature do not overstep the boundary between transcendental knowledge and transcendent speculation. We examine it from the judicial Standpoint that we may assay the properties of teleological reflective judgments of Relation necessary for the possibility of empirical laws, which always finally come down to causal rules of connection in a context. Asserting a *necessitated* connection in a context is what an empirical law does – that and nothing more. The act of *making such an assertion* is an inference of judgment, and we can pull out from Kant’s applied metaphysic three types of inference necessary for serving a structure of Nature.

The first is the **inference of ideation**, which asserts a physical matter. An object is a function of unity in cognition, and when an object is presented in sensibility in an intuition that lacks content in the scope of that empirical object we call the Self, it signifies a *thing*. There can be no connection of causality and dependency without objects to be connected. An inference of ideation held-to-be-binding in the *manner of a thing* is the inference of a physical matter. The condition in sensibility for the inference of ideation is consciousness of *kinesis* in subjective time in the apprehension of successive intuitions, each of which is made to represent, in the matter of sensation and the *Gestalt* of outer form, an appearance in time in the *modus* of persistence in time. Ideation in apperception asserts *this thing* in theoretical context and object of appetition in practical context. Ideation is affinity in belief.

The second is the **inference of induction**. Logically, induction expands from given empirical objects to a general object of the genus. Practically, induction is assimilation of subsystems into a higher system of structure. *Judicially* every intuition is a singular representation, and to generalize with respect to many objects is possible *in apperception* in no other way than with regard to successive appearances in time. “Cause” is not an object of outer sense, nor is “effect.” We are therefore dealing not with an object of outer sense but, rather, one of inner sense: *order in Nature*. The act of an inference of induction judges Nature-as-Object, which means: 1) technically (i.e., as *art* of judgment) as unity in Nature in all time, and 2) practically as the expression of the causality of freedom in judgmentation. Induction is *the regulation of natural order* in holding-to-be-binding that successive events have a necessary connection in inner sense, and the manner of belief expressed in such an inference has for an object a supersensible *Unsache*-thing, the subjective principle of which is *in mundo non datur casus*. Ideation makes objects, induction infers ideas. The rational capacity for *expectation* is transcendently grounded in the subjective inference of induction.

Here I think it is important to point out that the inference of induction in teleological reflective judgment is utterly indifferent to what is contained *in* the representation of an object. The inference is not one of classical *determinism* but rather one of *determinability*. The inference is “there must be a law of connection” and not “the connection is specifically *this*.” Kenge the pygmy’s “law of witchcraft”<sup>19</sup> is my “law of depth perception.” In quantum mechanics the laws of transformation from one quantum state to another are stated in mathematical terms, generalize around a supersensible object – probability – and posit specific rules for applying this idea. The doctrine that results is not “deterministic” in the classical sense of that word, but nonetheless provides rules of determination, along with rules for what *not* to expect to know.

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<sup>19</sup> see Chapter 16.

The third and final inference of judgment is the **inference of analogy**. While induction is based upon an inference of succession, analogy is an inference of coordination. In analogy the characteristics of one given concept (reproduced into the synthesis of the *Verstandes Actus*) are inferred to belong also to a second given concept. This is inference by simile.

Induction is the inference where I hold for true what comes from many as if it came from all under a general inference and concept. I infer thus: what is due to as many things as I have ever known must also be due to all that are of this species and genus . . .

Secondly, as for what concerns inference according to analogy, this is nothing other than an induction, but an induction only in respect to the predicate. Namely, when two things have come together in respect of all properties I have been able to know in them, then they will also come together in the remaining properties, which I have not known in them, and thus runs inference according to analogy. Analogy and induction are merely crutches for our understanding [KANT8a: 232 (24: 287)].

Unlike induction, from which comes the series of concepts to be connected in the manifold of concepts via succession of condition to conditioned, analogy produces coordinate concepts for one concept based on characteristics of the concept of another thing: Fire is red and John has red hair, therefore John is like fire (e.g., “has a fiery temper”). The thing to which characteristics are being inferred must share some characteristic with the thing from which the inference is drawn, and the inference of analogy then infers other characteristics known of that thing to belong also to the first thing. Such an inference is not one of succession in time (in apperception) but, rather, is drawn under the *modus* of coexistence in time (mutual reciprocity in *Existenz*). Kant’s third law of mechanics is founded upon such a form of inner sense.

Again, teleological reflective judgment regulates structure (in analogy it regulates the specification of substructure) and is unconcerned about the contents of the concepts being inferred. Analogies are as logically speculative as inductions, but are not favored by repetitive displays in experience. This is why they are easier to misapply than induction, and why making reliable maxims of thinking in terms of analogy is more difficult.

And so, gentlemen, we are all like pieces of the coins that children break in half for keepsakes – making two out of one, like the flatfish – and each of us is forever seeking the half that will tally with himself.<sup>1</sup> The man who is a slice of the hermaphrodite sex, as it was called, will naturally be attracted by women . . . and the women who run after men are of similar descent . . . But the woman who is a slice of the original female is attracted by women rather than men . . . while men who are slices of the male are followers of the male, and show their masculinity throughout their boyhood by the way they make friends with men, and the delight they take in lying beside them and being taken in their arms. And these are the most hopeful of the nation’s youth, for theirs is the most virile constitution [PLAT4: 544 (191d-e)].

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<sup>1</sup> This Platonic myth offered to explain heterosexual and homosexual behavior. Originally there were *three* human sexes (hermaphrodite, male, and female). But Zeus grew angry and sliced everyone in two. Love is when a person is seeking to become whole again by re-uniting with his or her other original half.

Inferences of judgment span multiple moments in time. This does not mean that every intuition formed in apprehension is necessarily targeted for conceptualization through the synthesis of re-cognition in imagination. Unconceptualized intuitions are permitted in the theory. The affective character linked to an intuition that is to be conceptualized has the aesthetic Quality of beauty, whereas the other two *momenta* of aesthetic Quality in judgment are energetics of acting. Reflective judgment regulates the *Gestaltung* of objective perception, and in this role reflective judgment does not come under the condition of inner sense (time) but, rather, is a regulating act that stands as the condition of the synthesis of pure intuition in general. It is the bridge between sensuous representation and practical ratio-expression.

To summarize: 1) the inference of ideation in teleological reflective judgment regulates the transformation of intuition of appearance into concept of an object (persistence in time, the internal in general Relation); 2) the inference of induction regulates the transformation of the scope of contexts of objects in Nature through connection of whole series in Nature (succession in time, the external in general Relation); 3) the inference of analogy regulates the transformation of the understanding of the *Existenz* of objects through coordination of predicate concepts (coexistence in time, the transitive in general Relation). The acts of inference are themselves affective acts of judgment, concerned only with regulation according to the principle of the logical formal expedience of Nature.

#### § 4.4 Phenomenology

Kant presents three ontological theorems of phenomenology, but here I think his deductions are more telling (for our purposes) than the theorems. The focus of these theorems is motion as an object of experience.

In the applied metaphysic, motion (*kinesis*) as object of *experience* constitutes an intriguing aspect of physical ontology because, firstly, knowledge of motion is inseparable from the capacity of the Organized Being to construct the *Gestaltung* of empirical spaces in time and, second, an empirical space is not an object of any sensation to be attributed to a transcendental object in the environment (external to *soma*). An empirical space has no Quality of moving power attributed to it, and thus has a wholly different ontological standing from that of a material thing (a “physical substance”). “Space,” to quote Einstein again, “is not a thing.” This remark is as valid for an auditory or a haptic space as for visual-tactile “outer space.”

We begin with the fourth explanation of matter:

Matter is the movable so far as it can be an object of experience as such [KANT15a: 260 (4: 554)].



“Motion” is obviously a familiar part of everyone’s experience. But “motion *qua* motion” has been a puzzle for philosophy since the time of the ancient Greeks. We know it, as object of the senses, as appearance; but what sort of appearance and in what context with other appearances is it? Kant provided a lengthy remark examining this question.

Motion, like everything else that is represented through sense, is given only as appearance. For its representation to become experience, we require also that something be thought through understanding, namely, besides the mode in which the representation inheres in the *subject*, also the determination of an *Object* thereby. Thus the movable, as such, becomes an object of experience when a certain *Object* (here a material thing) is thought as *determined* with respect to the *predicate* of motion. But motion is change of relation in space. There are thus always two correlates here, such that either, *first*, the change can be attributed in the appearance to one just as well as to the other, and either the *one* or the *other* can be said to be moved, because either is equally valid, or, *second*, one must be thought in experience as moved to the exclusion of the other; or, *third*, both must be necessarily represented through reason as moved together. In appearance, which contains nothing but the Relation in the motion (with respect to its change), none of these determinations are contained; but if the movable, *as such*, namely according to its motion, is to be thought as determined, i.e. on behalf of a possible experience, it is necessary to indicate the conditions under which the object (matter) must be determined in one way or another through the predicate of motion. At issue here is not the transformation of semblance into truth but of appearance into experience; for in the case of semblance, understanding, with its object-determining judgments, is always in play, although it is in danger of taking the subjective for objective; but in appearance no judgment of understanding is met with at all [KANT15a: 260 (4: 554-555)].

As an object, motion is something *logically predicated of* a physical object. Thus, while it can be an *Unsache*-thing (a happening), it can never “itself” be regarded as a *Sache*-thing (i.e., as physical matter). Within the applied metaphysic, motion can be logically predicated of a physical matter, or of an empirical space, or both. But the data of the senses makes no predications (that would be a copy-of-reality mechanism), and so we require *rules* by which it can be determined what the manner of logical predication of motion is to be. Such a rule must be either phoronomical or dynamical or mechanical, according to which of the three titles of Quantity, Quality, or Relation the context of the predication is conditioned.

Kant presented three ontological theorems, one for each of these cases. The first is:

The rectilinear motion of a matter with respect to an empirical space, as distinct from the opposite motion of the space, is a merely *possible* predicate. The same when thought in not the least Relation to a matter external to it, i.e. as *absolute motion*, is *impossible* [KANT15a: 261 (4: 555)].

This is the law in the context of phoronomy. Those readers who have some background in physics will have no trouble recognizing this theorem as one of the basic pegs in Einstein’s deduction of the special theory of relativity. “Rectilinear motion” means “motion in a straight line,” but we will not here digress into another discussion of what “straight line” means other than to remark that implicit in the situation described in the theorem is the absence of “forces” said to “accelerate” the matter (to use the language of physics).

At issue here is the validity of attributing motion to either the physical thing or to empirical space. Either predication is valid because both are objects, all motion is relative between objects, no Quality of moving power is involved, and the predicate makes a determination that is strictly within the province of phoronomy. On the other hand, it is invalid to make such a predication in terms of absolute space because absolute space is not an object at all; it is the pure form of intuition of outer sense, thus is not an appearance.

Whether a body is said to be moved in relative space, and the latter said to be at rest, or whether, conversely, the latter shall be said to be moved, with the same speed in the opposite direction with the former at rest, is not a dispute about what is due to the object, but only about its relationship to the subject, and therefore is due to appearance and not to experience . . . Now the representation of an object through one of two predicates, which are equally valid with respect to the Object and differ from one another only with respect to the subject and its mode of representation, is no determination in accordance with a *disjunctive judgment*, but merely a choice according to an *alternative judgment* . . . Now that which is in itself undetermined with respect to two opposed predicates is to that extent *merely possible* [KANT15a: 261 (4: 555-556)].

Seen from the judicial Standpoint, either form of representation is equally expedient, and thus the process of reflective judgment is **indifferent** to which representation gets marked at a moment in time. Either one presented in sensibility will do equally well for the satisfaction of Reason. As for the case involving absolute space, *this judgment cannot even come up* because the pure intuition of outer sense is not presentable as appearance in sensibility.<sup>2</sup>

Kant's second ontological theorem determines Modality of motion in the context of dynamics. In my opinion, Kant missed the chance to state this theorem in somewhat more general terms, but here it is as he gave it:

The circular motion of a matter is an *actual* predicate of this matter, as distinct from the opposite motion of the space; by contrast, the opposite motion of a relative space, assumed instead of the motion of the body, is no actual motion of the latter [space] but rather, if taken to be such, is mere semblance [KANT15a: 262 (4: 556-557)].

What is at issue here is *change of motion* (acceleration). A body in space undergoing circular motion is continually changing its direction of motion, which is to say that it is continually exhibiting a new motion. However, Kant's law of inertia tells us that such a change of motion must be attributed to the moving power of a thing. Relative space, by contrast, has no moving power, and therefore the motion must be regarded as actually predicated of the matter and not of the space. The motion of a relative space can only be phoronomic; only that of matter can be dynamic.

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<sup>2</sup> In pre-relativistic physics, "absolute space" was a supersensible object, the idea of which was implanted in physics by Newton. This means that the old argument in classical mechanics about absolute vs. relative motion had nothing to do with *given* appearances but rather only with discursive ideas of *Dinge an sich*, not transcendental objects in Nature.

The argument I have just given is basically identical to the argument Kant used to deduce the second theorem of phenomenology. The key factor is *acceleration* because this is change in the quantity of motion, therefore is related directly to matter (not to space), and therefore requires in Quality a moving power. The reason I think Kant missed stating a more general theorem is because accelerated motion in a “straight line” (that is, without change of direction) would come under the very same deduction and lead to the very same conclusion.

The historical significance of this question lies in an old debate in physics concerning what are called “pseudo forces.” Probably the one most familiar to everyone is the so-called “centrifugal force.” Take a ball attached to a string and spin it around in a circle; the string pulls on the ball and keeps it from flying away, and this is called a centripetal force. But you will also feel an outward tug on the string, and this tug is what is called “centrifugal force.” Because you feel no tug unless you are twirling the ball around, it seems (and appeared to be so to Newtonian physicists) that there was a “force” arising from no other cause than the motion of the ball relative to absolute space. Or, to take another example, we are all familiar with geosynchronous satellites today. The satellites used by the global positioning system are such. These satellites orbit the earth at a distance such that their orbital period matches the period of revolution of the earth. An observer on earth, looking up at the satellite, will see it at rest relative to himself. But since he knows that the satellite is attracted by the earth’s gravity, why doesn’t it fall? Well, goes the argument, there must be another force, the centrifugal force, holding it up. Again, the Newtonian would argue, this must be a force due to motion with respect to an absolute space.

These arguments are, of course, no longer accepted as valid in physics because the idea of absolute space is no longer accepted as valid. Pseudo forces (also known as “fictitious forces”) are a consequence of the way laws of mechanics are mathematically expressed given particular geometric coordinate systems. Feynman gives some nice examples of this:

The next kind of force we shall discuss might be called a pseudo force. In Chapter 11 we discussed the relationship between two people, Joe and Moe, who use different coordinate systems. Let us suppose that the positions of a particle as measured by Joe are  $x$  and by Moe are  $x'$ ; then the laws are as follows . . . This means that although the laws of force from the point of view of Joe would look like

$$m \frac{d^2 x}{dt^2} = F_x ,$$

the laws of force as looked upon by Moe would appear as

$$m \frac{d^2 x'}{dt^2} = F_{x'} - ma .$$

That is, since Moe’s coordinate system is accelerating with respect to Joe’s the extra term  $ma$  comes in, and Moe will have to correct his forces by that amount in order to get Newton’s laws to work. In

other words, here is an apparent, mysterious new force of unknown origin which arises, of course, because Moe has the wrong coordinate system. This is an example of a pseudo force; other examples occur in systems that are *rotating*.

Another example of pseudo force is what is often called “centrifugal force.” An observer in a rotating coordinate system, e.g., in a rotating box, will find mysterious forces, not accounted for by any known origin of force, throwing things outward toward the walls. These forces are due merely to the fact that the observer does not have Newton’s coordinate system, which is the simplest coordinate system.

Pseudo force can be illustrated by an interesting experiment in which we push a jar of water along a table, with acceleration. Gravity, of course, acts downward on the water, but because of the horizontal acceleration there is also a pseudo force acting horizontally and in a direction opposite to the acceleration. The resultant of gravity and pseudo force makes an angle with the vertical, and during the acceleration the surface of the water will be perpendicular to the resultant force, i.e. inclined at an angle with the table, with the water standing higher in the rearward side of the jar. When the push on the jar stops and the jar decelerates because of friction, the pseudo force is reversed, and the water stands higher in the forward side of the jar.

One very important feature of pseudo forces is that they are always proportional to the masses; the same is true of gravity. The possibility exists, therefore, that *gravity itself is a pseudo force*. Is it not possible that perhaps gravitation is due simply to the fact that we do not have the right coordinate system? . . .

Einstein put forward the famous hypothesis that accelerations give an imitation of gravitation, that the forces of acceleration (the pseudo forces) *cannot be distinguished* from those of gravity; it is not possible to tell how much of a given force is gravity and how much is pseudo force.

It might seem all right to consider gravity to be a pseudo force, to say we are all held down because we are accelerating upward, but how about the people in Madagascar, on the other side of the earth – are they accelerating too? Einstein found that gravity could be considered a pseudo force only at one point at a time, and was led by his considerations to suggest that the *geometry of the world* is more complicated than ordinary Euclidean geometry . . . If we distort the geometry sufficiently it is possible that all gravitation is related in some way to pseudo forces; that is the general idea of the Einsteinian theory of gravitation [FEYN3, Ch. 12: 10-12].

In the world before Einstein pseudo forces certainly looked real enough to most people. Issues like “why doesn’t the moon fall down?” can be dodged easily enough by saying that the moon *does* fall, but it falls *around* the earth (because of its tangential velocity and the earth’s radius), but other pseudo forces, such as Feynman’s water jar example, are quite a bit trickier to deal with. Invoking pseudo force makes this problem *much* easier to work mathematically, at the expense of a troubling ontology. Kant himself didn’t know how to make pseudo forces go away; he called them a “paradox that deserves to be solved.” But he knew they *did* have to be gotten rid of.

Is gravity a pseudo force, or not? Even today this seems to be a major ontological problem in physics, judging by the dualism that emerges when a physicist tries to explain “the gravity problem” to an educated non-physicist – e.g. an engineer. Sometimes it sounds like gravity is a pseudo force – everything is really all right, it’s just that the Einstein equation is so difficult to solve exactly. Sometimes it sounds like gravity truly is, to use Kant’s terminology, a moving power – the problem is how to enfold gravity into the quantum theory. And sometimes it sounds like some physicists think of it in terms of some kind of railroad tracks in space (so-called “geometrodynamics”) – which would seem to make a “thing” of space. One sees this kind of

pseudo explanation a lot in science shows on television trying to explain things, usually “black holes,” to the lay public. And some “quantum geometrodynamists” have no hesitation at all in making a “thing” out of space (or, more accurately, “spacetime geometry”):

Of all the remarkable developments of physics since World War II, none is more impressive than the prediction and verification of the effects of the vacuum fluctuations in the electromagnetic field on the motion of the electron in the hydrogen atom. That development made it impossible to overlook the effects of such fluctuations throughout all physics and, not least, in the geometry of spacetime itself . . . Quantum fluctuations in the geometry are superposed on and coexist with the large-scale, slowly varying curvature predicted by classical deterministic general relativity . . . Even in atomic and nuclear physics the fluctuations in the metric . . . are so small that it is completely in order to idealize the physics as taking place in a flat Lorentzian spacetime manifold.

The quantum fluctuations in the geometry are nevertheless inescapable, if one is to believe the quantum principle and Einstein’s theory. They coexist with the geometrodynamical developments predicted by classical general relativity . . . In other words, geometry is not deterministic, even though it looks so at the everyday scale of observation. Instead, at a microscopic scale, it “resonates” between one configuration and another and another . . . These small scale fluctuations tell one that something like gravitational collapse is taking place everywhere in space and all the time; that gravitational collapse is in effect perpetually being done and undone; that in addition to the gravitational collapse of the universe, and of a star, one has also to deal with a third and, because it is constantly being done and undone, most significant level of gravitational collapse at the Planck scale of distances.<sup>3</sup>

It would seem that not only outer space (“the vacuum”) but geometry as well is to be regarded as a physical thing. But is all this really “inescapable”? Well, yes, if one chooses not to escape. There really is a measurable phenomenon, called the Lamb-Retherford shift<sup>4</sup>, and explaining this theoretically is the impressive achievement mentioned above. Its explanation is one of the major accomplishments of the quantum electrodynamics of Feynman, Schwinger, and Tomonaga. But “vacuum fluctuation” is hardly a suitable description of the theory if one interprets this phrase to mean that “the vacuum itself” is “doing something.” It is true enough that the language of quantum electrodynamics theory is rich with talk about “vacuum fluctuations” and “vacuum polarization.” The term “vacuum state” refers to what is called the “ground state” in a relativistic quantum field theory, and it ultimately references an abstract mathematical idea of a Hamiltonian operator (the heir to Hamiltonian function we discussed in Chapter 16). The idea was, as best as I know, first introduced by Heisenberg to describe statistical fluctuations in the expected value of charge and current densities at points in space that served as the “matter-field” counterpart of fluctuations in electric and magnetic field strengths.<sup>5</sup> All this sounds very complicated, and it is, but the key point is that any connection between these ideas and the idea of “space” as a *thing* is

<sup>3</sup> C.W. Misner, K.S. Thorne, and J.A. Wheeler, *Gravitation*, San Francisco, CA: W.H. Freeman & Co., 1973, pp. 1190-1194.

<sup>4</sup> W.E. Lamb, Jr. and R.C. Retherford, “Fine structure of the hydrogen atom by a microwave method,” *Physical Review*, vol. 72, p. 241 (1947).

<sup>5</sup> W. Heisenberg, “Über die mit der Entstehung von Materie aus Strahlung Verknüpften Ladungsschwankungen,” *Sachsische Akademie der Wissenschaften*, vol. 86, p. 317 (1934).

ontologically unfounded; the mathematics in no way depends on making any such connection. In point of fact, there is no physical meaning for the idea of vacuum fluctuation at all in the context of an absolutely empty space. To go even further and connect the vacuum fluctuation idea to that of the geometry of spacetime in general relativity is nothing else than speculation by analogy.

The scale, by the way, at which these geometrodynamical “vacuum fluctuations” would operate (if there were any objective validity to them at all) is the “Planck length”: about  $10^{-35}$  meters. This is smaller than the so-called “radius” of a proton by more than a million-trillion times. Need I comment that something this small is completely immeasurable by any technique known today? Not surprisingly, no such effect has ever been observed. It is also not surprising that the theory uniting gravity and the quantum theory has not been verified – for the simple reason that it does not yet exist. But the idea of “vacuum fluctuation” is, nonetheless, a popular idea among Big Bang cosmologists – as an excuse for there having been a “Big Bang” in the first place. It is an alleged cause of an alleged effect.

But enough digression. Kant’s second theorem says that accelerated motion must be predicated of matter (it is “actual motion”) and not of space. From the judicial Standpoint, the perception of a change of *kinesis* is expedient for the inference of an Object as a *Sache*-thing, i.e. it *draws attention* to a particular content of presentation in sensibility and away from the other content of the presentation. Now, what does the phrase “draw attention” mean? Subjectively it means the arousal of a *Lust* for the representation said to be attended to, and arousal of an *Unlust* for that in representation not attended to. *Lust-Kraft* is the power of *psyche*, and **Kant’s theorem, considered judicially, is a principle of the orientation of *psyche* through perception.** Loosely speaking, change of *kinesis* is a “spotlighting” or “focusing” factor in determination.

There is in this principle an interesting implication for a long-standing logic problem in that branch of artificial intelligence theory known as “knowledge representation.” The problem is called “the frame problem” and is stated thusly:

The frame problem, first described by McCarthy and Hayes (1969), arises when we attempt to describe the effects of actions or events using logic. In a nutshell, the problem is this. If we write our description using classical logic, as well as describing what changes when a particular kind of action is performed or a particular kind of event occurs, we also have to describe what does *not* change. Otherwise, we find that we cannot use the description to draw any useful conclusions. For example, if our description includes the fact that painting the walls of my office changes their color, we also have to include facts such as the following.

- Painting the walls does not alter their shape.
- Painting the walls does not change my hairstyle.
- Painting the walls does not precipitate a General Election.
- Painting the walls does not make the Sun rise.

It’s clear that this list could go on indefinitely. Indeed, it turns out that when we use the

straightforward apparatus of classical first-order logic in the most obvious way to describe the effects of actions, the description of what does not change is considerably larger than the description of what does change. Yet facts about what does not change like those above are usually a matter of common sense. Surely when we describe the effect of actions, we should be able to concentrate on what changes, and be able to take what does not change for granted. The frame problem is the problem of constructing a formal framework that enables us to do just this.<sup>6</sup>

Consciousness is the representation that a representation is in me. *Attention* is the representation that *this* representation is in me. From the judicial Standpoint, ***Kant's second theorem is the law of attention.***

Lastly we come to Kant's third theorem:

In every motion of a body, whereby it is moving with respect to another, an opposite and equal motion of the latter is *necessary* [KANT15a: 263 (4: 558)].

Kant's deduction of this theorem was as follows.

According to the Third Law of Mechanics . . . the communication of motion of bodies is possible only through the community of their original moving powers, and this only through mutually opposite and equal motion. The motion of both is therefore actual. But since the actuality of this motion does not rest (as in the second Theorem) on the influence of external powers, but follows immediately and unavoidably from the concept of the Relation of the *moved* in space to anything else *movable* thereby, the motion of the latter is *necessary* [KANT15a: 263 (4: 558)].

Here we must keep in mind that the ontological theorems of mechanics, as theorems of Relation, can present *mechanical* motion only in terms of determinations of *quantity* of motion – what physics calls mechanical momentum. The third mechanical law is expressed in terms of “action and reaction” (which is Newtonian terminology), and so where Kant speaks of equal and opposite motion in the third theorem of phenomenology he means equal and opposite action and reaction, i.e. “conservation of momentum” is necessary.

Although it is mildly risky, let us illustrate this idea using a mild fantasy (a “thought experiment”).<sup>7</sup> Imagine a universe in which there were just two spherical bodies, and let us imagine that at first there is no relative motion of any sort between them. Now suppose that, all of a sudden, body A begins to revolve on its axis. We can propose no cause for this change except the effect of a moving power of body B communicated to body A. But in this case, we must also

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<sup>6</sup> M. Shanahan, *Solving the Frame Problem: A Mathematical Investigation of the Common Sense Law of Inertia*, Cambridge, MA: The MIT Press, 1997, pg. 1.

<sup>7</sup> “Thought experiments” are always risky because it is all too easy to slip past what is transcendently valid into the illusory realm of transcendent ideas. By definition, a thought experiment does not present an actual situation but only an imaginary one. In his “general remark” at the end of the applied metaphysic, Kant proposed a thought experiment dealing with the rotation of the earth in which he did in fact end up presenting a physically specious argument about dropping a stone into a deep hole [KANT15a: 266 (4: 561)]. If the Master of transcendental theory can slip into such an error, who cannot?

conclude that an opposite effect takes place in body B through the effect of the moving power of A communicated to B. Therefore, it would be invalid to say that A begins to move while B does not. That is the significance of the third law of phenomenology.

But to say “it is said” in this example presupposes some observer, O, who is “doing the saying.” What if this hypothetical observer is located in space and not on either of the two spheres. Let us further say that to this observer it appears that A begins to rotate but B does not. The theorem tells us that the appearance of rotation of A must be caused by the combined effects of moving powers of both B and O being communicated to A *and reciprocally* that a moving power of A is communicated to both B and O. In the scenario we have constructed here, we would have to conclude that O’s observation that B does not begin to rotate is mere semblance – that his motion and that of B are such that B does not appear to rotate *relative to O*. To be *objectively valid* any law of physics proposed to explain the observed effect would have to be such that this law also explained an effect on B and O productive of what was observed. We might therefore call this third law of phenomenology a “theorem of general relativity.” As it happens, Einstein began the presentation of the general theory of relativity in his famous paper with an example not too unlike the one we’ve just looked at:

In classical mechanics, and no less in the special theory of relativity, there is an inherent epistemological defect which was, perhaps for the first time, clearly pointed out by Ernst Mach. We will elucidate it by the following example: - Two fluid bodies of the same size and nature hover freely in space at so great a distance from each other and from all other masses that only those gravitational forces need to be taken into account which arise from the interaction of different parts of the same body. Let the distance between the two bodies be invariable, and in neither of these bodies let there be any relative movements of the parts with respect to one another. But let either mass, as judged by an observer at rest relatively to the other mass, rotate with constant angular velocity about a line joining the masses. Now let us imagine that each of the bodies has been surveyed by means of measuring instruments at rest relatively to itself, and let the surface of  $S_1$  prove to be a sphere, and that of  $S_2$  an ellipsoid of revolution. Thereupon we put the question – What is the reason for the difference in the two bodies? No answer can be admitted as epistemologically acceptable, unless the reason given is an *observable fact of experience*. The law of causality has not the significance of a statement as to the world of experience, except when *observable facts* ultimately appear as causes and effects.

Newtonian mechanics does not give a satisfactory answer to this question. It pronounces as follows: - The laws of mechanics apply to the space  $R_1$ , in respect of which the body  $S_1$  is at rest, but not to the space  $R_2$ , in respect to which the body  $S_2$  is at rest. But the privileged space  $R_1$  of Galileo, thus introduced, is a merely *factitious* cause, and not a thing that can be observed. It is therefore clear that Newton’s mechanics does not really satisfy the requirement of causality in the case under consideration, but only apparently does so, since it makes the factitious cause  $R_1$  responsible for the observed difference in the bodies  $S_1$  and  $S_2$ .

The only satisfactory answer must be that the physical system consisting of  $S_1$  and  $S_2$  reveals within itself no imaginary cause to which the differing behavior of  $S_1$  and  $S_2$  can be referred. The cause must therefore lie *outside* this system. We have to take it that the general laws of motion, which in particular determine the shapes of  $S_1$  and  $S_2$  must be such that the mechanical behavior of  $S_1$  and  $S_2$  is partly conditioned, in quite essential aspects, by distant masses which we have not included in the system under consideration. These distant masses and their motions relative to  $S_1$



and  $S_2$  must then be regarded as the seat of the causes (which must be susceptible to observation) of the different behavior of our two bodies  $S_1$  and  $S_2$ . They take over the rôle of the factitious cause  $R_1$ . Of all imaginable spaces . . . there is none which we may look upon as privileged *a priori* without reviving the above-mentioned epistemological objection. *The laws of physics must be of such a nature that they apply to systems of reference in any kind of motion.* Along this road we arrive at an extension of the postulate of relativity.<sup>8</sup>

Einstein's conclusion here is none other than a *law about laws*. It is a Modality theorem for the doctrine of phenomena. His remarks, about the significance of causes (explanation via physical laws) being necessarily dependent ultimately upon observable facts and on the inadmissibility of factitious causes, are ones scientists must never forget, and no amount of enthusiasm for mathematics should be allowed to override the requirement for the phenomenally observable in science.<sup>9</sup> Aristotle, not Plato, was the father of science.

From the judicial Standpoint, the third ontological law of phenomenology speaks to **the expedience of coherence in a context**. To understand what this means, we view it judicially as the synthesis of *a ground of orientation of Lust per se* regarded as *a ground of indifference*. No presentation of an object of attention can be determined except this determination also include a mutual determination of other objects of experience *which provide context* to the first object and present this context in sensibility. Coherence in a context means the opposition of *Lust* and *Unlust* in a balance (equilibrium). Much earlier, in our discussion of the ontology of judgment and Reason, it was said that concepts in the manifold of concepts are *summoned* into the synthesis of reproductive imagination, but we did not say under what condition this summoning is to take place. That condition is the principle of the *judicial* third law of phenomenology just stated. Note that the condition of satisfaction in judgmentation given here is a merely formal *and subjective* condition, utterly indifferent to the objective matter of the judgments. Just as we may regard the second law of phenomenology as an orientation of attention via the motoregulatory expression of the Organized Being's capacity to focus its powers of sense, so likewise the third law is the principle for *the orientation of speculative Reason*, which commands the employment of the process of determining judgment through ratio-expression.

Taken in total, the twelve ontological theorems, when viewed from the judicial Standpoint, constitute an Idea of subjective regulation as a bridgework between the theoretical and practical character of *nous*. We may call this bridgework: **the natural schema of judgmentation**.

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<sup>8</sup> A. Einstein, "The foundation of the general theory of relativity," *Annalen der Physik*, 49, 1916. Translated and reprinted in *The Principle of Relativity*, W. Perrett and G.R. Jeffery (trs.), NY: Dover Publications, 1952.

<sup>9</sup> For this reason, a science of mental physics, when we obtain one, can never divorce psychology from biology, nor mental anatomy and physiology from neural anatomy and physiology, nor mathematics from transcendental Logic.

## § 5. The *Momenta* of Teleological Judgment

We have so far seen that the proactive character of teleological reflective judgment is to be exhibited as the structuring of a manifold of desiration. The matter of which this is the manifold are affective perceptions, regarded as desires, presented through aesthetical reflective judgment. But thus far has not been presented a clear picture of just what is meant by the idea of desiration in reflective judgment. It has been said that desiration (*Begehrung*) is not merely a longing but rather is desire (*Begehren*) actively demanded. We must undertake to explain how the *practical meaning* of the phrase “actively demanded” is to be understood, and in doing so we will arrive at the explanation of the *momenta* of teleological reflective judgment. We will see that these *momenta* are functions, that their immediate practical consequence is structuring of actions, and that the *objective expedience* of cognitions is a consequential structure of the *act* of structuring actions. For these reasons, the collective *momenta* of teleological reflective judgment will be called *the functions of desiration*.

Each head of the 2LAR of the process of teleological reflective judgment will be understood through the synthesis of two characterizing poles: the cosmological Idea (from the judicial Standpoint) and aesthetical perfection. These provide source and direction in teleological judgmentation. The synthesizing functions (*momenta*) under each head take their character from the synthesis of two functional poles: transcendental topic and the natural schema of judgmentation. First we will obtain an explanation of the significance of each of the four heads (Quantity, Quality, Relation, and Modality). Peeking ahead, the significance of these four titles of representation will be seen as: 1) extensive functions of practical implication; 2) intensive functions of practical implication; 3) persuasions of judgment; and 4) preferences of judgment. Next comes the synthesis of three judicial ideas of transcendental topic with those of the schema of Nature. When we are finished, we will see that composition of desiration in teleological judgment is the composing of meaning implications, and connection in desiration is the act of structuring a *nexus* of orientations. Composition in teleological judgment thereby aligns with the synthesis in continuity of transcendental Meaning, while connection in teleological judgment aligns with the synthesis in continuity of *Self-Existenz* (the judicial Idea).

### § 5.1 Quantity in Teleological Judgment

We have seen that the cosmological Idea of absolute completeness of composition regarded judicially is the Idea of complete equilibrium in the composition of interest expressed in the form

of activity in the activity loop. We have seen that the key consideration for this Idea is that of awareness of gaps in experience, and that no gap exists where no interest of Reason is involved. An interest is expressed when innovations build up and lead to a new equilibrium cycle in the activity loop.

At the same time, Quantity in aesthetical perfection is aesthetical generality, which implicates the general practicability of an aesthetical cognition for a great many Objects. However, cognitions are products of the thinking Subject's activities. Even the formation of an empirical "figure" (*Gestalt*) in an empirical space rests upon kinaesthetic feedback to sensibility grounded in motoregulatory expressions. The more situations that are assimilated into a sensorimotor scheme, the greater is the perfection of that scheme. A scheme capable of complete (that is, universal) applicability would be an ideal scheme under the first cosmological Idea since the composition of such a scheme would be suitable for the satisfaction of any interest of pure Reason.

The combination (in a synthesis) of the cosmological Idea and generality in aesthetical perfection implies a maximum of *robustness* in the equilibration of the composition of interests. This is, indeed, none other than Piaget's law of "higher and better equilibrations" in the ontology of speculative Reason. The functions of Quantity in teleological reflective judgment are thus seen to be *momenta* of synthesis for composing actions that will lead to these higher and better equilibrations.

Piaget defines a **meaning implication** as an operation such that

$p$  implies  $q$  (written  $p \rightarrow q$ ) if one meaning  $m$  of  $q$  is embedded in the meanings of  $p$  and if this meaning  $m$  is transitive [PIAG12: 3].

Any relationship between actions is an implication [PIAG12: 156] and, furthermore,

It follows that an object<sup>1</sup> is a set of conjoined predicates and its meaning amounts to "what can be done" with it, and it is thus an assimilation to an action scheme (whether the action is overt or mental). As for actions themselves, their meaning is defined by "what they lead to" according to the transformations they produce in the object or in the situations to which they are applied. Whether we are dealing with predicates, objects, or actions, their meanings always implicate the subject's activities, which interact either with an external physical reality, or with elements that were previously generated by the subject, such as logico-mathematical entities.

Furthermore, we may distinguish various degrees in meanings: They main remain "local" in that they relate to limited data and to particular contexts; they may become "systematic" in laying the groundwork for structures; and finally they may become "structural" when they pertain to the internal composition of already constituted actions [PIAG12: 119-120].

An act of judgment assimilating to an action scheme is therefore an act that produces a

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<sup>1</sup> A Piagetian object = a thing.

meaning implication. Here we may note the logical character of Piaget's three "degrees" in meanings:<sup>2</sup> "local" meanings are singular in character, pertaining to a particular context; "systematic" meanings have the character of plurality, i.e. they pertain to multiple contexts; and "structural" meanings are logically universal in the sense that "structure" is the general integration of the whole of the self-regulating transformations of the system. The acts of teleological reflective judgment, so far as Quantity is concerned, compose actions having precisely the *effect* (end result) of a meaning implication. We therefore call these *momenta* the **extensive functions of implication**.

Next we must deduce the *Realerklärung* of the three extensive *momenta*. Quantity in the determination of transcendental topic is orientation of the Subject for aesthetical generality, and the purposive character of this orientation is called *intent* and pertains to the *points of application* for the energetics of aesthetical reflective judgment. We have for the judicial functions of Quantity in transcendental topic: 1) the intentionally systematic (sameness = identification in our general 2LAR); 2) the intentionally contextual (difference = differentiation in our general 2LAR); and 3) the intentionally organized (integration in our general 2LAR). Corresponding to these are the three functions of Quantity in the natural schema: 1) composition of the motoregulatory act; 2) generation of topological neighborhood; and 3) presentation of a syncretic *Obs.OS*.

Now, we call a *scheme* "that which can be repeated and generalized in an action." It is here quite easy to see that the combination of the intentionally systematic in transcendental topic with the composition of a motoregulatory act is nothing else than **scheme implication** in sensorimotor activity, and this is the first *momentum* of Quantity in teleological reflective judgment. Its logical character is singular and its meaning implication is local (contained in the particular scheme).

An Object is that in the concept of which the manifold of a given intuition is united. Standing under the idea of Object is that of object as the "what-it-is" that brings a necessary unity to a cognition. An object is that in which the meanings of representations are vested. To put this another way, the object is the substratum for a *plurality of contexts*. The combination in synthesis of an intentionally contextual representation produced through the generation of a topological neighborhood (which is the process of *Gestaltung* in the synthesis of an empirical intuition) is thus seen to be a **contextual implication** of sensibility.

While contextual implications in sensibility are differentiating ("*this* situation rather than *that* situation," hence accommodation in sensibility), the object as the unity of divers contexts is

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<sup>2</sup> Technically, it is not correct to call these three Piagetian levels of meanings "degrees." The idea of a degree is an idea of Quality, but the three "degrees" stated by Piaget are extensive (Quantity) rather than intensive (Quality).

integrative. *The object is the organization of a multiplicity of divers particular appearances.* The intentionally organized in transcendental topic combined in synthesis with the natural schema of the syncretic *Obs.OS* thus shows that the function of judgment in this case is nothing else than the act of making an **objective implication**. This is the third *momentum* of Quantity in teleological reflective judgment. While these *momenta* of Quantity in judgment are not constitutive for concepts of objects (for the constitution of object concepts belongs to determining judgment alone), they *regulate* the *process of constitution* through the synthesis of *meaning implications* with regard to the form of the matter of empirical meanings.

## § 5.2 Quality in Teleological Judgment

As we begin our discussion of Quality in teleological judgment, a few words need to be said with regard to the natural schema of the syncretic *Obs.OS*. We have previously seen (Chapter 9) that Piaget's hierarchy of equilibration structure describes different levels through different types of equilibrations. In these we saw the evolution from a primitive *Obs.OS* to observables *Obs.O* and *Obs.S*, and coordinations *Coord.O* and *Coord.S*. We see none of these constructs in the *momenta* of Quantity just deduced. It is then natural for us to ask: Where do these come from? The answer to this question becomes obvious as soon as we recognize that these constructs are the products of an anasynthesis – an act of analytic division of the concepts reproduced in sensibility (analytic aggregation in the presentment of Reality) followed by a recombination in the synthesis of an empirical intuition. However, even if we say that an intuition is the representation of an appearance of, for instance, an *Obs.O* or a *Coord.S*, this *significance* vested in the intuitive representation still requires a meaning implication for the intuition to *mean* an appearance of this sort. An intuition is a singular representation that nonetheless contains a manifold, and in extensive magnitude within this manifold we have no objectively valid ground upon which to conclude that the appearance of, say, an *Obs.O* does not contain in its constitution further kinaesthetic perceptions of the action scheme that grounds the meaning of the *Obs.O*.

To put this another way, the objective perception of an appearance *Obs.O* is, with respect to sensibility, still the presentation of a syncretic *Obs.OS* that can undergo further *distinctions* through thinking. *Obs.O*, *Obs.S*, *Coord.O*, and *Coord.S* are *conceptual objects*, and their constitution belongs to the free interplay of imagination and *determining* judgment. In this process, teleological reflective judgment plays no constitutive role because although the *momenta* of Quantity are necessary for the possibility of meaning in appearances, they are still *non-cognitive* functions of judgment so far as *phenomenal* objects are concerned. Every *objective* Piagetian observable or coordination in the theoretical Standpoint is still a *subjective Obs.OS*



This character of Piagetian levels of equilibration is illustrated in detail in Figure 18.5.1.<sup>3</sup> Even after an object-action distinction (*O* and *S*) has been drawn and coordinating inferences have appeared in a type II interaction structure<sup>4</sup>, the two sides of the equilibration “balance” are still dependent upon the scheme of awareness (process *OS*, which contains interactions of type I) and the causality coordination scheme (process *SO*). Even though on the *cognitive* plane the Subject can now *think* in terms of phenomenal objects and actions, on the *reflective plane* of structure formation the acts of judgmentation never get away from the binding of meanings to actions. We can note here that this state of affairs is entirely consistent with the theoretical cosmological Idea of Quality (absolute completeness in the division of a given whole in appearance).

From the judicial Standpoint, the second cosmological Idea is the Idea of a common condition under which all divers regulations of interest coalesce in a common ground. Paired with this Idea is the Quality of aesthetical perfection (aesthetical distinctness), which regarded theoretically we have seen as the perfection of intuition whereby an idea is exhibited *in concreto* through examples. Judicially, aesthetical Quality in perfection is a “portrayal” whereby rules of concepts are arranged by means of illustrations *in concreto*, i.e., where divers examples can be made to coalesce in a common Object. Now because teleological judgment is non-cognitive reflection, if it is to be the engine of aesthetical perfection then the common ground required under the cosmological Idea cannot be any objective ground and must instead be a subjective ground. Aesthetical *perfecting* in the “act of portrayal,” regarded as a synthesis of coalescence in a common condition of all regulations of interest, is the idea of a *cause*. Because such a cause can be only a subjective cause, we look at this synthesis in terms of that which is at once *objectively* expedient (possible to think as vested in natural phenomena) yet *subjectively* can only be an empirically-determinable *inner* factor in the service of the categorical imperative (i.e., it must be a psychological factor). The **demand for happiness in the state-of-being** is such a cause. Let us recall that “happiness” is understood as consciousness of an uninterrupted pleasantness of life, which practically implies freedom from both wanted (*Lust*) and unwanted (*Unlust*) circumstance. *Demand* for such a state-of-being is a psychological moving power that we can only attribute to a determination of the transcendental place of *affectivity* in regard to acts of desiration.

Attainment of such a state-of-being is, as some psychologists conclude, a “neutral gear.”

<sup>3</sup> The reader is referred to Piaget’s *The Development of Thought* [PIAG19: 42-77].

<sup>4</sup> Each new higher level of equilibration is initiated as a type I interaction (Chapter 9), and only afterward can the type II interaction be formed. Formation of the type II structure is required before it is possible for the Subject to proceed to another higher level of equilibration. Note also that coordinating inferences *Coord.O* at each level also connect to other *Obs.O* terms in other type II interactions on the same level of equilibration.

Judicial happiness is neither a state of joy nor the opposite (sorrow), but rather is a state of equilibrium in the balance of *Lust* and *Unlust*. The *momenta* of Quality in teleological judgment are thus to be seen as functions serving to structure this demand through meanings vested in what is givable (*dabile*) in sensibility, and so, as functions regulating a judicial-psychic moving power of desiration, we call them the **intensive functions of implication**. That these functions stand in a relationship to noetic organization (through the synthesis in continuity in transcendental Meaning) is clear.

For the judicial Quality of transcendental topic, regarded under the general title of placing the demand for happiness in a specific act, opposition (*Widerstreit*) is a demand for acting to cancel. Because teleological judgment makes no constitutive judgments of objects, this cancellation is not to be viewed as a transcendental negation, but rather as a real negation of an existing and present state-of-being. In this sense, it is a property of judgmentation that could be said to fill a similar role on the judicial-psychical plane as Kant's power of repulsion plays on the physical plane inasmuch as this *orientation* of acting might be said to "invade" or "compress" the "psychical space" of a real and present subjective state-of-being. Next, agreement is, to use Kant's magnitude terminology, a negative opposition (and thus, under the same simile, can be said to be the judicial-psychical correspondent of a "power of attraction"). It is a real reinforcement of an existing and present state-of-being. The synthesis of the ideas of agreement and opposition, as the third and synthesizing function of transcendental topic, is the balancing of these two types of judicial-psychical moving powers, and is justly called the demand for equilibration.

Standing beside the ideas of Quality in judicial transcendental topic are the natural schemata of Quality. Beside agreement we set well-being; beside opposition we set ill-being. In our earlier discussion of judicial Quality in natural schema we did not talk about the idea of subcontrarity in dynamics, but this schema is not difficult to recognize. Just as in the applied metaphysic of Nature the synthetic combination of power of attraction and power of repulsion is the balance of equilibrium, on the judicial-psychical plane ill-being balancing well-being is happiness, the "neutral gear" of satisfaction and the purposive function of all judicial demand. Ill-being is consciousness of a hindrance to the agreeableness of life attaching (as accident-of-being) to the *Dasein* of an Organized Being. Well-being is consciousness of the promotion of the agreeableness of life. But a hindrance to agreeableness regarded as the promotion of this same agreeableness is a *limitation* we must call *perfecting the agreeableness* since any additional promotion or additional hindrance detracts from the perfection of this agreeableness, either



through an unsatisfactory excess or a real lack.<sup>5</sup> But happiness is the consciousness of the agreeableness of life accompanying the whole *Dasein* of the Organized Being, hence subcontrarity in the Quality of the judicial natural schema is the schema of happiness.

We will call the synthesis of agreement and well-being the *momentum* of **real tendency** (*Realtendenz*). This terminology is suggested by Kant's frequent pairing of opposition with "real repugnancy" (*Realrepugnanz*). The dictionary gives the definition of the word "tendency" as

**tendency**, *n.* [ML. *tendentia*, from L. *tendens*, extending.]

1. the character of tending toward something; inclining or contributing influence; inclination; proclivity; bent.
2. a course toward some purpose, object, or result; a drift.
3. a definite purpose or point of view in a literary work.

Agreement (as a real reinforcement) combines with the schema of well-being (as consciousness of the promotion of agreeableness in life) as desiration for increasing of the intensive magnitude of agreeableness in consciousness. *Real* tendency denotes coalescence in an empirical meaning, i.e. an implication of an *action*. Real tendency is the *momentum* for judging an action as expedient for the satisfaction of a feeling of *Lust*.

The synthesis of opposition and ill-being we will call **real repugnancy**. From the dictionary,

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<sup>5</sup> Recall that satisfaction (*Wohlgefallen*) carries a negative connotation, e.g. "oh, this is not-bad." Its opposite, dissatisfaction (*Mißfallen*), carries the reverse connotation, e.g., "oh, this is not-good." It is the peculiar nature of affective judgment in the Organized Being that the flavor of judgments of satisfaction and dissatisfaction have this odd leaning towards cognizance of the "is not-" rather than in favor of cognizance of the "is." However, this is in keeping with the character of happiness as a psychological "neutral gear" and with that odd property of practical Reason in terms of its power of casting a veto over Desire, e.g. Obhi's and Haggard's "free won't." Although one cannot help but notice a seeming congruity in this with the doctrine of the Epicureans (i.e., "pleasure is the absence of pain"), one also needs to bear in mind that negative intensive magnitude can only be regarded as "negative" insofar as a Relation of community is concerned. If *Wohlgefallen* be regarded as a negative *Mißfallen*, it is equally the case that one must regard *Mißfallen* as a negative *Wohlgefallen*. Thus, Epicurean realism is confronted with the antinomy of its antithesis (i.e., "pain is the absence of pleasure"), and leads to a quite meaningless tautology (i.e., "pleasure is the absence of the absence of pleasure" and "pain is the absence of the absence of pain"). When we speak of the character of judgments of satisfaction or dissatisfaction, the *orientation* of how we are to set up a Standpoint must have a grounding in an objective validity that is *practical*. In the Organized Being model, this orientation must be drawn from the thorough-going community of *nous* and *soma*, thus our *practical* compass must be one that harmonizes the noetic with the somatic. On the somatic plane, appearances in Nature of biological actions take on their greatest clarity when understood in terms of biological regulation of what Bernard called the organism's "internal milieu." As Damasio put it, "even when large variations occur in the environment that surrounds an organism, there is a dispositional arrangement available in the organism's structure that modifies the inner workings of the organism. The dispositional arrangement ensures that the environmental variations do not cause a correspondingly large and excessive variation of activity within . . . The specifications for survival . . . include . . . a dispositional arrangement for the regulation of internal states that subsumes a mandate to maintain life" [DAMA1: 136]. In Bernard's words, "In living beings the internal milieu, which is a true product of the organism, preserves the necessary relations of exchange and equilibrium with the external cosmic environment". The *orientation in appearance* of biological regulation is one of *Opposition* to change, and with this orientation our connotations of satisfaction and dissatisfaction are in alignment.

**repugnancy**, *n.* [L. *repugnantia*, opposition, repugnance, from *repugnans*, ppr. of *repugnare*, to fight against.]

1. extreme dislike or distaste; reluctance; unwillingness; intense antipathy; aversion.
2. opposition of qualities or principles; contrariety; inconsistency; incongruity; contradictoriness.

A judgment of repugnancy is an act “fighting against” a conscious condition of being. Opposition, as a demand for acting to cancel, combines with ill-being (consciousness of a hindrance to the agreeableness of life) as desiration for decreasing the intensive magnitude of disagreeableness. *Real* repugnancy also denotes coalescence in an empirical meaning, in this case as an act which implicates an action judged as expedient for the abolition of the consciousness of a state of *Unlust*. The action tied to the act of judgment corresponds, at a primitive level, to what Piaget calls a type- $\alpha$  compensation behavior. In contrast, the action tied to the judgment of real tendency corresponds, again at a primitive level, to Piaget’s type- $\beta$  compensation (integration of the disturbing factor into the system). By “correspond at a primitive level” I mean only that these *momenta* of teleological judgment *ground the possibility* for the development of more complex schemes of behavior, the development of which Piaget and his coworkers were able to observe and classify. Regarded as psychical moving powers, the *momenta* of real tendency and real repugnancy have for their degrees of intensive magnitude the degrees of *Lust* and *Unlust*, respectively.

The synthesis of demand for equilibration and the natural schema of happiness is the **implication of real significance**. To see this, we first recall our earlier remark (§3.2) that *significance is the matter of composition of intent*. Now, *empirical* significance merely denotes:

**significance**, *n.* [L. *significans*, significant.]

1. that which is signified; meaning.
2. the quality of being significant; suggestiveness; expressiveness.
3. importance, consequence; moment.

We set beside this dictionary definition the corresponding verb,

**signify**, *v.t.* [L. *significare*: *signum* – a sign, *facere* – to make.]

1. to be a sign or indication of; to mean, as, his rags signify poverty.
2. to show or make known, as by a sign, word, etc.; as, signify “yes” by raising your hand.

**signify**, *v.i.*, to be of consequence; to have meaning; to matter.

The empirical meanings of a representation of *nous* subsist in the actions tied to that representation, and this practical conjunction is what grounds objective validity in the idea of empirical (real) meanings as relationships binding the Organized Being to Nature. ***Real significance is the Object that contains all these empirical meanings in its scope.***

Now, *to implicate* is

**implicate**, *v.t.* [L. *implicatus*, pp. of *implicare*.]

1. to enfold; to intertwine; to entangle.
2. to imply.
3. to involve; to bring into connection with; to show or prove to be connected or concerned,

and *to imply* is

**imply**, *v.t.* [L. *implicare*, to involve, entangle, enfold; *in*, in, and *plicare*, to enfold.]

1. to enfold or entangle; to wrap up. [Obs.]
2. to indicate without saying openly or directly; to hint; suggest; intimate.
3. to have as a necessary part, condition or effect; to contain, include, or involve naturally or necessarily.
4. to ascribe; to refer. [Obs.]

From these we come to the noun,

**implication**, *n.* [L. *implicatio* (-onis), an entwining, enfolding, from *implicare*, to enfold, implicate.]

1. the act of implicating or the state of being implicated; entanglement.
2. an implying or being implied.
3. that which is implied, from which an inference may be drawn.

The *momentum* of implication of real significance is the judicial act of coalescing empirical presentations of sensibility in an Object which subsists only in the manifold of actions by which the representation *is given* meanings. Piaget defined a meaning implication ( $p \rightarrow q$ ) to be that which is encountered when one transitive meaning  $m$  of  $q$  is embedded in the meanings of  $p$ . The implication of real significance is the act of judgment that *makes as a ruling* a meaning implication. When we discussed the *momenta* of Modality in the *Realdefinition* of the categories of understanding, we said that a concept is *made to signify* expedience or inexpedience for some purpose (transcendental reflective perspective), and, from the hypothetical reflective perspective, this subsisted in enfolding the representation into a context. The third *momentum* of Quality in teleological reflective judgment is the act of making a meaning implication which has the by-product of realizing (making real) the *symbolic* meaning of a concept.

Pure practical Reason is completely satisfied by nothing less than full conscious accord in the formal expedience of perception, and such an accord is the complete *embodiment* of equilibrium, in which subsists the judicial Ideal of happiness. The acroamatic principle under which stands the third *momentum* of Quality is nothing else than or short of the principle of happiness, which is the fundamental disposition exhibited by all acts of teleological reflective judgment. The actions tied to the act of the implication of real significance correspond at a primitive level to Piaget's type- $\gamma$  ("superior") compensation behavior (the interplay of

compensations that establish transformations through actions structuring the overall organization of the manifold of *nous*). To use a Damasian expression, it is the act which embodies the mind and minds the body in the thorough-going community of the animating principles of *psyche* in the metaphysical *nexus* of noetic organization.

*Remark on the Mathematical Functions of Teleological Judgment:* In the language of the Critical Philosophy, the six *momenta* of Quantity and Quality are the mathematical functions (*momenta* of composition) of teleological judgment. Aesthetical reflective judgment is concerned with what Piaget might call the instrumentation of sense – i.e. the presentation through feeling of the manner in which the data of the senses affects the Organized Being. The aesthetical *momenta* are in task the functions monitoring receptivity and in this way are reactive functions. Teleological reflective judgment, on the other hand, is proactive in nature. Its *momenta* are drivers of the form of spontaneity in every non-autonomic action of the Organized Being, both somatic and noetic. The mathematical functions of teleological judgment are *momenta* of the composition of real meanings. A real meaning always has a two-fold ground. Physically, the empirical *Realerklärung* of a transcendental meaning is an action implication, and composition here is a necessitated composition of action schemes. Practically, a real meaning is a rule of transformation, from a particular state-of-being to a givable (*dabile*) state-of-being, within the power of the Organized Being to realize at a pre-cognitive level which, nonetheless, is called objective by virtue of the objective outcomes in cognitions that ensue. The implications of the *momenta* of composition *make* the presentations of sensibility give matter and shape to Reality in Nature through coalescence in a generalizable (scheme-composing) context of life. □

### § 5.3 Relation in Teleological Judgment

From the judicial Standpoint, the third cosmological Idea states: the causality of freedom is the absolute beginning of all appearances. Let us compare this judicial form of the Idea with its statement from the theoretical Standpoint: absolute completeness in the origin of an appearance generally. In the theoretical Standpoint the Idea is direction-indicating, a regulating compass for directing the employment of understanding through rational thinking. But the judicial statement of the Idea is in categorical form, placing the source of the possibility of cognition with nothing else than the life-function of the Organized Being as transcendental Subject for all accidents of *Existenz* inhering in its substance. This, indeed, is the essential characteristic of the causality of freedom, which denies all imputation to external Nature in the environment of the Organized Being for any non-autonomic actions of the Organized Being. Just as there is no copy-of-reality

mechanism in receptivity, so also there is no rule of transformation for the structuring of the systematic Self-organization of *Self-Existenz* taken from outside the boundary of the Self. The Self is a structure.

Relation in aesthetical perfection is complete congruence in sensibility with the Subject in its laws of sense-semblance. Such congruence is called a state of belief. While sensation in sensibility corresponds to the matter of a transcendental object, the figure (*Gestalt*) in sensibility (form of intuition) is attributed to the power of form-building pure intuition (thus to the Subject rather than the transcendental object of its representations). The object affects receptivity as sensation in appearances, but the form of perception is an inner production, owing the possibility of its origination to the pure synthesis of the form of intuition and its *determination* to the power of spontaneity in judgment. How the senses are affected is *reconciled* with the *Self-Existenz* of the Organized Being through the power of judgment. Here I use the word “reconcile” in the sense of the third and fourth of the following dictionary definitions:

**reconcile**, *v.t.* [L. *reconciliare*: *re-*, and *conciliare*, to conciliate.]

1. to make friendly again or win over to a friendly attitude.
2. to settle (a quarrel, etc.) or compose (a difference, etc.).
3. to make consistent, compatible, etc.; to bring into harmony.
4. to make content, submissive, or acquiescent (to).

The synthesis of causality of freedom and belief is an act of **Self-reconciliation**. For this reason, we call the *momenta* of Relation in teleological judgment the **persuasions of judgment**.

The judicially internal in transcendental topic is the internal agent-patient Relation in determining sense (*nous* → *soma*). With this is paired the inference of ideation in natural schema. Ideation is responsible for the production of general Object concepts in the synthesis of recognition by the power of imagination. It is logically categorical. But seen as the placement of the causality of perception with the noetic capacity to determine motoregulatory expression (for the *Gestaltung* of the pure intuition of space), ideation is judicially a categorical desiration exhibited by the transformation of appearances in the structuring of an object. To put this another way, any action predication requires the action to be predicated of a logical subject. For judgment, that which is represented as the logical subject of the action is a focus of attention. Therefore as a function of Relation in teleological judgment this *momentum* is **reflective subjection**.

The judicially external in transcendental topic is the external agent-patient Relation in determining sense (*soma* → *nous*). The corresponding natural schema is the inference of induction, which is the act of judging connection of successive representations in inner sense (pure intuition of time). This goes to the regulation of natural order in appearances, but, in synthesis with the external in transcendental topic, the causality of perception is attributed to the

capacity for receptivity (being affected) in the Organized Being. Induction implies expectation because the succession in time is subsumed (in determining judgment) under the notion of causality and dependency. Belief here subsists merely in a holding-to-be-binding as a rule of expectation. In logical essence, the synthesis in this function of Relation is a hypothetical desiration (desiration for a natural order in that which theoretically can only be regarded as contingent). The appropriate name for this *momentum* is **reflective expectation**.

The transitive Relation in transcendental topic is the interior agent-patient Relation in determining sense (*nous* → *nous*). The corresponding natural schema is the inference of analogy. Analogy is induction applied to predications of coordinate characteristics, and it is logically disjunctive in the sense that multiple determinate judgments, in the manifold of concepts, are represented in the community of the sphere of the disjunctive concept. However, the teleological judgment does not judge concepts but, rather, adjudicates the act of *Gestaltung* in the three-fold synthesis of the *Verstandes Actus* in sensibility, where an intuition of a coordinate concept must arise from the *Actus* of abstraction followed by the synthesis of re-cognition in imagination. The teleological judgment therefore determines the transcendental schema (in this case, coexistence in Relation<sup>6</sup>) in the form of inner sense (*modus* of the pure intuition of time) as an orientation of imagination. However, the act of the teleological judgment is one that can be called a *transferral* because *materia in qua* in the concept of one object are drawn into an imaginative synthesis of the appearance of a different object. Analogy generalizes the *application* of the appearance of a predicating concept.

Analogy (in a qualitative sense) is the identity of the relationship between grounds and consequences (causes and effects) that contain the ground for similar consequences (i.e. regarded outside of this relationship), so far as it occurs in spite of the specific difference between the things or those of their properties as such. Thus, in comparing the artistic acts of animals with those of human beings, we think the ground of this effect in the former, which we do not know, through the ground of similar effects in humans (reason), which we do know, and thus as an analog of reason; and by that also we denote that the ground of the artistic capacity, under the designation of an instinct, is in fact specifically different from reason, but yet has a similar relationship to the effect (comparing, say, construction by beavers with that of humans). – Yet on this account, that the human being uses *reason* in order to build, I cannot conclude that the beaver must have the same sort of thing and call this a *deduction* according to the analogy.<sup>7</sup> Yet from the comparison of a similar mode of operation in animals (the ground for which we cannot immediately perceive) to that of humans (of which we are immediately aware) we can quite properly conclude *in accordance with the analogy* that animals also take action according to *representations* (are not machines, as

<sup>6</sup> Recall that inferences of ideation, induction, and analogy are all determinations of transcendental schemata of Relation, hence judge the synthesis of subjective time in sensibility.

<sup>7</sup> Obviously it is possible to conclude precisely this. It is a commonly observed phenomenon in childish adherences. What Kant means is that it is not objectively valid to conclude this as a deductive proof from the theoretical Standpoint because such an inference lacks an objectively sufficient ground. Teleological judgment is quite apt to allow the inference that beavers *plan* how to build dams *because* humans plan how to build dams; but we do not *know* beavers do this, however much we might *think* that they do.

Descartes would have it), and that, despite their specific difference, they are still of the same genus as human beings (as living beings). The principle of the warrant to so conclude lies in the same ground for counting animals, with respect to the aforesaid determination, as members of the same genus with human beings, as humans, so far as we compare them with one another externally on the basis of their acts. There is *par ratio*<sup>8</sup> [KANT5c: 328fn (5: 464fn)].

There is a causality involved in the third *momentum* of Relation, but what is specifically different is the causal characteristic. In the second *momentum* the causal characteristic is that of a phenomenal cause (in an *a priori* inference, e.g., “*B* will cause *A*”), but in the third the characteristic takes the form of a “because” rather than a “causes,” and this “because” has to be called a *psychological* (efficacious) causality (e.g., “*A* is *x* and *B* is *x*, therefore *A* is *y* because *B* is *y*”). Thus, we call the third *momentum* **reflective transferal** – the expedient application of a part of the manifold contained in one representation to the manifold of another.

As much as logicians detest analogies and scientists distrust them, this third *momentum* is crucial to the development of intelligence because it is the primitive basis for the development of what Piaget calls “mobile” schemes from “secondary” schemes.

This secondary scheme is a complete totality of intercoordinated movements and functions every time the child perceives the objective in connection with which the scheme was formed, or analogous objectives . . . From this second point of view as well, it presages “mobile” schemes which are capable of unlimited generalization. But, if one examines this closely, one notices that certain essential differences are in opposition to the simple secondary scheme (that of the third stage), the same scheme having become “mobile” during the present stage.<sup>9</sup> At first the relations between objects, relations already utilized by the secondary scheme, are given just as they are in the midst of the latter without the child’s having elaborated them intentionally, whereas the relations due to the coordination of “mobile” schemes have really been constructed by the subject. Through the very fact that secondary circular reaction consists in simply reproducing a result discovered by chance, the scheme which proceeds from its use constitutes a global and indissoluble totality. It applies itself in one block and if it envelops certain relations between separate objects, these relations remain purely phenomenalist and can only be taken out of their context to give rise to new constructions . . . The considerable progress in this respect made in the fourth stage is that the same schemes are made “mobile.” . . . In becoming “mobile” – that is to say, fit for new coordinations and syntheses – the secondary schemes become detached from their usual contents to apply themselves to a growing number of objects. From particular schemes with special or peculiar contents they accordingly become generic schemes with multiple contents.

It is in this sense that the coordination of the secondary schemes, and consequently their disassociations and regroupings, give rise to a system of “mobile” schemes whose functioning is comparable to that of the concepts or judgments of verbal or reflective intelligence. In effect, the subordination of means to ends is the equivalent, on the plane of practical intelligence, of the subordination of premises to conclusions, on the plane of logical intelligence . . .

As we have emphasized, the coordination of schemes which characterizes the behavior patterns of the present stage is always on par with a putting into relationship of other objects themselves subsumed by these schemes. In other words, the relations which determine a given object are not only relations of appurtenance which permit it to be inserted in one or several schemes, but all the relations which define it from spatial, temporal, causal, etc., points of view . . . In short, the

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<sup>8</sup> equal reason.

<sup>9</sup> Piaget is talking about stage IV of sensorimotor intelligence, which is the stage of coordination of secondary schemes.

coordination of the schemes presupposes the existence of a system of relations between objects and between schemes other than the simple inherent relations. Let us observe that the schemes themselves involve, in order to be formed, these same relations. Therefore, a secondary scheme is not only a sort of primitive “concept,” it is a number of “relations” in the sense we have just recalled. But it is only from the time when the schemes become “mobile” that the working of “relations” is clearly dissociated from that of “classes” [PIAG1: 237-239].

This quotation should also serve to remind us that the teleological function remains very much attached to practical actions, and its act of judgment continues to involve the matter of composition in desiration (and, therefore, implications of meanings). We are dealing here with very low-level presentative judgments, not scholarly discourses (which too often have been presumed as the content of Kant’s categories).<sup>10</sup> The persuasions of judgment (like those of our next title, the preferences of judgment) operate through the action capacities of the adaptive *psyche* to make the *nexus* of teleological reflective judgments.

#### § 5.4 Modality in Teleological Judgment

Before any representation can be the representation of an object, there must be a judgment that an object exists. For a sensible object the concept is determinant through a judgment of the form {unity, reality, substance & accident, actuality & non-being} following an inference of ideation. But for a supersensible object, e.g. object-as-a-cause, the *momentum* of causality & dependency provides an objective ground for inferring the supersensible object only in terms of a transcendental *Dasein* but not in terms of real *Dasein* (a supersensible object, by definition, cannot come under the category of reality in Quality because its concept completely lacks the factor of sensation in intuition; it requires exhibitions of its idea). The third cosmological Idea, considered from the theoretical Standpoint, regulates the employment of determining judgment to seek for every appearance a condition for that appearance, and the fourth cosmological Idea (again from the theoretical Standpoint) calls for absolute completeness in that series *in terms of something upon which* the *Dasein* of the appearance depends. This is a hopeless task for *speculative* Reason and the theoretical Standpoint, but not for *practical* Reason from the judicial Standpoint. The judicial-cosmological Idea of Modality is the Idea that **the I of transcendental apperception is the unconditioned condition for thinking the *Dasein* of any object**. Just as nothing is real *to me* until I have a concept of the object combined with other concepts that give it a context, so also nothing is *an object* to me until *I judge there to be* an object.

Probably nothing better exhibits the practical objective validity of this Idea than the radical egocentrism of the infant.

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<sup>10</sup> To use the language of computer engineers, all these judgments are at a level like the level of microcode, not like the level of “high-level language” coding or even that of assembly language level encoding.



The first contact between the acting subject and the environment, that is, taking possession of things through reflex assimilation, does not at all imply awareness of objects as such. Even if, as we have asserted, such an activity involves a capacity for repetition, generalization, and recognition, nothing as yet forces the child to dissociate the action itself from its point of application. What he recognizes when he finds the nipple, for example, is a certain relation between the object and himself, that is, a global image in which all the sensations connected with the act in progress intervene. Such recognition has nothing in common with a perception of objects. The same is true of the first schemes to be acquired . . .

During the first two stages the behavior of the subject shows how much he is already aware of the periodic disappearance of objects. The newborn child who is nursing manifests emotion when the breast is taken from him, and the nursling, as soon as he has learned to smile, knows how to express his disappointment when his mother suddenly leaves his field of vision. But the subject's only positive reaction for finding lost objects consists in reproducing the latest accommodation movements he has made; he sucks the air or stares at the place where his mother's image disappeared. The object is still only an extension of the action; the child counts only on the repetition of his accommodation movements to realize his desire and, in case of failure, on the efficacy of his passion and his anger. He is acquainted only with actions which succeed at once and others which fail momentarily, but up to now the failure has not sufficed to permit distinction between permanent objects and an activity being exerted on them . . .

Real permanence begins only with a third process in object construction: the search for the vanished object in a comprehensible spatio-temporal universe. We recall that the three steps of this search characterize our last three stages: simple search without taking account of objective displacement groups, then search based upon the group of perceived displacements, and finally search involving the representation of displacements not perceived. The problem, therefore, is to understand how the child succeeds in elaborating such relations and thereby even constructing permanent objects under the moving images of immediate perception.

At its point of departure this active search for the vanished object merely extends the behavior patterns of the first three stages. The child begins to pursue invisible objects only after he has made the movement of grasping them when they are in sight. But even when this scheme becomes generalized and searching takes place independently of this condition, the object is at first sought only in a special place – where it was found the first time. Therefore it still depends on the action and constitutes only a practical object . . .

Objects are constructed to the extent that this transition operates, from the complete and unconscious egocentrism of the first stages to the localization of the body itself in an external universe. To the extent that things are detached from action and that action is placed among the totality of the series of surrounding events, the subject has power to construct a system of relations to understand these series and to understand himself in relation to them . . .

The solution to the problem, therefore, seems to us to be the following: the permanence of the object stems from the constructive deduction which from the fourth stage is constituted by reciprocal assimilation of the secondary schemes, that is, the coordination of schemes which have become mobile. Until this level has been reached the object merely extends the activity itself; its permanence is only practical and not substantial, because the universe is not detached from the action nor objectified in a system of relationships . . .

As we have seen . . ., the mobile schemes resulting from the coordination of secondary reactions constitutes not only some kinds of motor concepts that may be arranged in practical judgments and reasonings, but also some systems of relations that permit an increasingly precise elaboration of the objects on which these behavior patterns bear [PIAG2: 88-95].

Aesthetical certainty is the Siamese twin of this cosmological Idea. The perfection (making perfect) of aesthetical certainty

rests on what is necessary in consequence of the testimony of the senses, i.e. what is endorsed through sensation and experience [KANT8a: 549 (9: 39)].

Elsewhere Kant tells us that belief is an assertoric holding-to-be-true that is sufficient for acting. Strictly on the side of teleological reflective judgment, such a conviction must be called a holding-to-be-binding (because reflective judgment is objectively non-cognitive).

In opinion one is still free (problematic), in belief assertoric (one declares oneself) . . . In belief I am, as to the subject, already bound [AK16: 372-373].

The holding-to-be-true can be apodictic without the cognition being objectively apodictic. The former is only the consciousness that it is impossible that one could have erred in the application of indubitably certain rules, e.g. in experience. It is certain that it is experience [AK16: 388].

With regard to matters of belief (that is, the *Sache*-things of belief), Kant tells us that these are:

- 1) not objects of empirical cognition;
- 2) not Objects of cognition of reason (of cognition *a priori*);
- 3) those objects alone . . . in which the holding-to-be-true is necessarily free, i.e. not determined by objective grounds of truth independent of the nature and interests of the subject [KANT8: 75-77 (9: 68-70)].

Kant amplified on this characterization of belief as a free holding-to-be-true that is assertoric and bound to the interests of the Subject, and yet concerns neither objects of empirical cognition nor an *a priori* concept of Reason:

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

Between the obtainment of a cognition through experience (*a posteriori*) and through reason (*a priori*) there is no mediator. But between cognition of an Object and the mere presupposition of its possibility there is a mediator, namely an empirical ground or a ground of reason to accept the latter in regard to a necessary expansion of the field of possible Objects above those whose cognition is possible for us. This necessity takes place only in respect of that in which the Object is known as practical and practically necessary through reason, for to accept something on behalf of merely expanding theoretical knowledge is always contingent . . . This is a subjective necessity, to accept the reality of the Object for the sake of the necessary determination of will. This is the *casus extraordinarius*<sup>11</sup>, without which practical reason cannot support itself in regard to its necessary purpose, and here a *favor necessitatis*<sup>12</sup> proves useful to it in its own judgment. It can acquire no

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<sup>11</sup> supplementary (or additional) circumstance.

<sup>12</sup> necessitated bias.

Object logically, but only set itself against that which hinders in the use of this Idea which practically belongs to it [KANT8: 75-76 fn (9: 67-69fn)].

An Object of belief when regarded as a thing from the theoretical Standpoint is contingent, but belief is nonetheless a necessary operation of judgmentation because from belief come general concepts, without which no understanding of Nature *as a system* is possible. We make our own beliefs in the service of the categorical imperative (for equilibration), and when experience gainsays the concept of this Object, the concept is accommodated to bring its sphere back into harmony with Nature as a system. Formal objective expedience produces a *bias* of teleological judgment in serving aesthetical perfection, in which belief in an objective perception (holding-to-be-true) is a consequence of a necessitated holding-to-be-binding for practical acting. When Kant calls belief an incomplete holding-to-be-true, that which a *concept* of belief lacks is a sufficient ground of objective validity for the cognition. Beliefs are a made-necessary consequence of an affective state of mind grounded in some practical rule of behavior, and a *presentation* of belief in sensibility (a belief of the moment), via the synthesis of reflective judgment, is the determining factor in the synthesis of apperception.

The synthesis of aesthetical holding-to-be-binding and the *I* of transcendental apperception, as the absolute condition for thinking the *Dasein* of any Object, is a functional we will call the **preference of judgment**. An intuition as a belief of the moment is a representation of sensibility that serves the objective formal expedience of Nature, yet we know that non-cognitive teleological judgment grounds its marking of such an intuition with a *bias* – a *favor necessitatis* – for serving a practical purpose. Put in other words, the object of a belief is *practically* presented as an “ought-to-be” wrought through mere desiration – the “what may I hope?” of the judicial interest of Reason. Thus it is nothing else than a practical preference of the process of teleological reflective judgment.

To get at the problematic *momentum* of desiration, we take the synthesis of matter in transcendental topic and the natural schema of indifference. Matter here is the determinable in sensibility, and regardless of whether this is sensation affected by a transcendental object or kinaesthetic feelings from motoregulatory expression in the synthesis of space, the combination of this determinable with the schema of indifference can be called a merely phonomic preference. The formal objective expedience is judged in this case solely on the basis of change in the matter of sensibility from one moment in time to the next; that for this *kinesis* there must be an appearance for apperception is a necessitated presupposition. We will call the *momentum* for this the **presupposing judgment**. The state of consciousness of sensibility here is still vague, and the presentation of intuition indistinct. The actions of the Organized Being are directed merely at

indifferently obtaining *any* condition of expedience.

With regard to a *momentum* of Modality in judgment, the actions determined by the act of judgment perform what Piaget calls a constitutive psychological function (the aim of judgment always acts to constitute a state of expedience). In presupposition of judgment no factor of cognition is yet involved (the conditions for cognition are not yet established) and the preference of judgment here can be grounded in nothing other than a pure aim for equilibrium of any kind. Now, all states of equilibrium are *cycles*, and attainment of equilibrium requires the *closing* of a cycle. The corresponding constitutive function of action aims *only* at achieving this closure. In *The Epistemology and Psychology of Functions*, Piaget called this the repetition coordinator:

The initial reaction is a random alignment which although preceding regularities naturally comprises partial ones (it would be interesting to analyze these since it is doubtful that pure chance exists in psychology). We will limit ourselves to the basic coordinator presupposed by this alignment, which we shall call *W = repetition*. It consists only in repeating an action [PIAG3: 33].

Repetition (circular reaction) is the practical observable action consequence of the *momentum* of presupposing judgment. In presupposing judgment the act of judgment seeks to establish some action scheme which sets up *materia circa quam* in the synthesis of apprehension suitable for the possibility of assimilating the *materia ex qua* of sensibility. The Subject is merely responding to the affectations of sense. The practical consequence in adaptation is what Piaget calls reproductive assimilation through accommodation of a scheme.

The synthesis of form in transcendental topic and attentiveness in the natural schema gives us the assertoric desiration of Modality. Here the expedience of satisfaction in the *form* of sensibility takes precedence over that of its matter, and the work of judgmentation is focused on a preferred form of desiration. We will call the *momentum* of judgment in this case the **demanding judgment**. This act of judgment, viewed as the condition of a constitutive action function, acts for what Piaget calls a recognitory assimilation. Piaget calls this the identification coordinator:

Now, if the repetition *W* expresses the reproductive assimilation of the scheme of the action, there exists a second basic coordinator which expresses the cognitive assimilation and will this time focus on the object of the action, i.e., *identification = I* [PIAG3: 33].

In less abstract terms, in demanding judgment the *action scheme* is what the act of judgment demands (asserts in desiration) and the *materia* of sensibility is to be assimilated into that scheme as the condition of satisfaction. Here the *materia circa quam* of sensibility is predetermined by the selected action scheme, and the task in sensibility is directed at extracting correspondingly expedient *materia in qua* from the whole of its *materia ex qua*.

We get the function of the apodictic desiration from the remaining combination of

presentation in belief (synthesis of matter and form, which is determining factor in transcendental topic) and the natural schema of coherence. Whereas in the first *momentum* we view the process of teleological judgment as being in free play with the synthesis in apprehension, and in the second *momentum* imagination and determining judgment as being in free play with respect to each other but conditioned by an explicit form of desiration, in this third *momentum* of the process of teleological judgment both the form of desiration and the free play of imagination and determining judgment are bound by a necessitation of pure practical Reason, namely that of a *generalizing assimilation* as the condition for the satisfaction of Reason.

Now, the immediate objective of teleological Modality is a subjective relationship in a scheme of action (non-cognitive desiration can immediately determine nothing else than an action), and the third *momentum* in any title of representation under Kant's transcendental Logic always can be found as the combination in synthesis of the first two:<sup>13</sup>

[One] first judges something problematically, then takes it assertorically as true, and finally asserts it to be inseparably combined with understanding, i.e. as necessary and apodictic [KANT1a: 210 (B: 101)].

In the first *momentum* of teleological Modality the scheme is merely problematic preference; in the second the scheme is an assertoric preference; in the third, a scheme is sought (problematically) that can be held-to-be assertorically mandated by practical Reason. Hence such a scheme is a made-necessary (necessitated) preference of judgment. We will therefore call the third function of Modality the *momentum* of **requiring judgment**. In the first *momentum*, the scheme follows affectivity and is determinable; in the second, sensibility is made to serve a determined scheme; in the third, the idea of a combination of these first two is an idea of putting together a determined sensibility and a determined scheme, i.e. accommodation of a known scheme to apply it to a given object (generalizing the applicability of a scheme).

Piaget calls the constitutive coordinator function for this case the substitution coordinator.<sup>14</sup>

This substitution can be conceived as the product of an action . . . of the subject (e.g. selecting  $y$  starting from  $x$  and finding a certain transformational correspondence between  $x$  and  $y$ ) or of a causal action (modifying  $x$  into  $y$  by making it larger, changing its color, etc.) or even of a simple movement (displacing a movable object by substituting position  $y$  for the initial position  $x$ ) [PIAG3: 3-4].

Given two objects  $A_1$  and  $A_2$ , we will say that a simple substitution  $C_0$  occurs if  $A_2$  is chosen in place of  $A_1$  . . . We will speak on the other hand of a  $C_1$  permutation if  $A_2$  is substituted for  $A_1$  and vice

<sup>13</sup> see *Critique of Pure Reason* [KANT1a: 215 (B: 110-111)]. Transcendental Logic is the Logic of real synthesis, and whereas only two opposing factors are required for logical analysis, synthesis always requires three, e.g. identification, differentiation, integration.

<sup>14</sup> He also favors us with the ambiguity of also calling this coordinator the *permutator* coordinator.

versa. Similarly, the ‘inversal’  $C_2$  will refer to the substitution of  $A_2A_1$  for  $A_1A_2$ , etc. Thus, it is clear that the simple substitution  $C_0$  is the combination which intervenes in all ‘generalizing assimilations’, the generalization of the scheme consisting in the application of the scheme to the new substituted objects [PIAG3: 173].

Piaget’s three coordinator functions ( $W$ ,  $I$ , and  $C$ ), plus a “combinator” he calls the associative coordinator (which merely associates two Piagetian objects) make up the full suite of elementary constitutive functions (“preoperatory” functional schemes) from which all “constituted” functions and operations are constructed.

We call a *scheme* of an action that which makes it repeatable, transposable, or generalizable, in other words, its structure or *form* as opposed to the objects which serve as its variable contents . . . Assimilation, which thus constitutes the formatory mechanism of schemes . . . appears in three forms. We will speak of functional . . . or ‘reproductory’ assimilation to designate the process of simple repetition of actions, thus the exercise which consolidates the scheme. Secondly, the assimilation of objects to the scheme presupposes their discrimination, i.e. a ‘recognitory’ assimilation which at the time of the application of the scheme to the objects makes it possible to distinguish and identify them. Lastly, there is a ‘generalizing’ assimilation which permits the extension of this application of the scheme to new situations or to new objects which are judged equivalent to preceding ones from this standpoint [PIAG3: 171-172].

Piaget’s work turned up these findings as findings of fact in empirical Nature. However, since the Organized Being must be regarded as its own source of actions (autonomy of freedom), the possibility of Piaget’s results can only be understood in a systematic doctrine if there is a transcendental factor as the ground of explanation. In the case of the three classes of assimilations and their constitutive functions, we find this necessary relationship to the transcendental Subject in the correspondence of the *momenta* of Modality to these forms of assimilatory behaviors.

## § 6. Summary of the *Momenta* of Teleological Judgment

This has been a long Chapter, and we will not drag it out any further. But before proceeding to the final part of this treatise, the process of practical judgment in Reason, we will linger just long enough to summarize the *momenta* of desiration in the following table.

### Extensive functions of implication

scheme implication  
contextual implications  
objective implication

### Persuasions of judgment

reflective subjection  
reflective expectation  
reflective transference

### Intensive functions of implication

real tendency  
real repugnancy  
real significance

### Preferences of judgment

the presupposing judgment  
the demanding judgment  
the requiring judgment