

## CHAPTER 3

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# Representation

*Representation is a mental determination where a thing is being referred to as if it were separate from myself.*

Kant

### § 1. The Primitive Character of Representation

There is a kind of unavoidable recursiveness involved in explaining the phenomenon of mind because a theory of epistemology is the product of man reflecting upon his own thinking Nature. Thus the *form* of the exposition of the theory (doctrine of methods) necessarily employs some of the very same concepts that the *matter* of the theory (doctrine of elements) seeks to explain. This is a peculiarity inherent in our topic absent in the doctrines of most other topics, where the doctrine of method (e.g. mathematical method) and the doctrine of elements (e.g. physics) are quite separate and distinguishable. This places some of our concepts in a dual role – as part of the form of exposition and as a concept expounded upon. The primitive idea of *representation* has this character.

If we are asked to explain what a representation is, we find ourselves faced with a difficulty because the only way to explain a representation is *by making a representation*. If we examine the dictionary definition<sup>1</sup> of this term we find

**representation**, n. [L. *repræsentatio* (-onis), a showing, exhibiting, manifesting, from *repræsentatus*, pp. of *repræsentare*, to represent]

1. the act or instance of representing
2. the state, fact, or mode of being represented (in various senses)
3. a likeness, image, picture, etc.
4. any exhibition of the form or operations of a thing by something resembling it
5. presenting anew or again (re-presentation).

Definition (3) merely provides us with particular *examples* of those things we call representations. Definition (4) comes closest to telling us what representation *in general* is, but the word “exhibition” – a showing or presenting for view – is used merely as a disguised version of the

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<sup>1</sup> I use the word “definition” in the context of a *dictionary* definition in a different sense than the *technical* usage in Kant's theory (which we discussed in Chapter 2). When referring to dictionary definitions, assume that “definition” has the usual connotation given to it by everyday language and not the mathematical connotation of “a sufficiently distinct and precisely delimited concept.”

idea of representation, and so (4) is in this sense a circular definition. Definitions (1) and (2) merely warn us that in the English language the word “representation” may refer to the *act* or to the subject of this act, and these are two different senses of the word.

In the Critical theory representation is a *primitive* mental act. Kant describes it as “something in me that refers to something else” [KANT19: 441 (29: 970)]. As a technical element of the theory, the idea of representation plays a crucial role just as ideas of the point and the line play central roles in the geometry. It is therefore of considerable importance that we achieve clarity in the meaning of this term.<sup>2</sup> What must we think when we think “representation-in-general”?

### § 1.1 Doctrine of Method for the Exposition of Ideas by Analytic Division

Our method of dealing with this question provides us with our first opportunity to illustrate a particularly important facet of the doctrine of methods in the Critical Philosophy. In Chapter 2 we said that the term *idea* refers to a concept whose object is supersensible – a *noumenon*. “Representation-in-general” is such a concept. A *particular* representation – say, the letters D-O-G representing in English the sound of the word “dog” – is clearly something that *is* sensible. The concept of a particular representation, like any concept that can be exhibited *in concreto*, is therefore not a member of the class of concepts we call ideas. Instead, we would name such a concept a *sensible* concept.

Our interest at present is not with examples of representation – the representation of *this* or the representation of *that* – but with the *general* meaning of the term representation. This question is important to us because *a theory is a representation of a part of Nature* insofar as the topic contains that part of Nature. When the topic is the phenomenon of mind – especially that part of the phenomenon of mind I have called *nous* in the Organized Being model of Chapter 1 – the task we set for ourselves is to understand how the phenomenon of mind makes those representations we call our *knowledge*. Since we desire to understand the Nature of mental representation, we must understand the general meaning of what it is ‘to represent’.

If Plato’s depiction of Socrates teaches us anything at all, it teaches us the utter futility of attempting to understand ideas by merely using examples. In dialog after dialog, on subjects such as “*what is* wisdom, justice, beauty, piety, virtue . . .?” we see Socrates demolishing “X is Y”

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<sup>2</sup> It is not an infrequent occurrence that the greatest confusion and most significant obstacles which confront a theory - particularly a philosophical theory - arise from the most primitive terms. I have read one commentary on Kant where the author wrote, emphatically, "'Presentation' for Kant's *Vorstellung* should never have been displaced . . . by 'representation' . . . Kant's philosophy is no representationalism." Well, it is true that Kant is not a "representationalist" in the sense of *Locke's* representationalism. But Kant did write *repräsentatio* in parentheses next to *Vorstellung*, and I think he did it on purpose. But that doesn't mean that the objectionable technical connotations Locke built into *his* "representation" apply to Kant's term.

definitions given as answers by the overconfident victims of his interrogations:

"I am forced to agree once more," cried Euthydemus, "evidently by my stupidity. I am inclined to think I had better hold my tongue, or I shall know nothing at all presently." And so he went away very dejected, disgusted with himself and convinced that he was indeed a slave.<sup>3</sup>

Socrates is the wisest mortal, says the Oracle of Delphi, because he knows he does not know.

SOCRATES: Take another example. Suppose we were asked about some obvious common thing, for instance, what clay is: it would be absurd to answer: potter's clay, and ovenmaker's clay, and brickmaker's clay.

THEATETUS: No doubt.

SOCRATES: To begin with, it is absurd to imagine that our answer conveys any meaning to the questioner, when we use the word 'clay,' no matter whose clay we call it - the dollmaker's or any other craftsman's. You do not suppose a man can understand the name of a thing, when he does not know what the thing is?

THEATETUS: Certainly not.

SOCRATES: Then, if he has no idea of knowledge, 'knowledge about shoes' conveys nothing to him?

THEATETUS: No.

SOCRATES: 'Cobblery,' in fact, or the name of any other art has no meaning for anyone who has no conception of knowledge?

THEATETUS: That is so.

SOCRATES: Then, when we are asked what knowledge is, it is absurd to reply by giving the name of some art. The answer is 'knowledge of so-and-so,' but that is not what the question called for.

THEATETUS: So it seems.

[PLAT2: 851-852 (147a-b)]

Particular representations stand in relation to representation in general in the same fashion that "knowledge about shoes" stands in relation to "knowledge." If we were dealing with a purely formal question of logic – that is, a question in which abstraction was made of all material content – the question of what representation in general is would admit to us no answer. Fortunately this is not the case because the idea of representation in general must have material significance, i.e., a meaning of some sort. If it did not, it would be of no interest or use in a theory of epistemology. Suppose it were possible for us to gather up and survey every possible particular representation, and then to make abstraction of all that differed among these representations. Then whatever remained – that which was common to all representations – could be used to give us an explanation *in concreto* for representation in general. This, however, is not possible to do and we must find another approach.

Aristotle offers us some advice which we will do well to repeat here:

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<sup>3</sup> Xenophon, *Memorabilia*, Bk. IV, ii. 39.

When the objects of an inquiry, in any department, have principles, causes, or elements, it is through acquaintance with these that knowledge and understanding is attained. For we do not think that we know a thing until we are acquainted with its primary causes or first principles, and have carried our analysis as far as its elements. Plainly, therefore, in the science of nature too our first task will be to try to determine what relates to its principles.

The natural way of doing this is to start from the things which are more knowable and clear to us and proceed towards those which are clearer and more knowable by nature; for the same things are not knowable relatively to us and knowable without qualification. So we must follow this method and advance from what is more obscure by nature, but clearer to us, towards what is more clear and more knowable by nature.

Now what is to us plain and clear at first is rather confused masses, the elements and principles of which become known to us later by analysis. Thus we must advance from universals to particulars; for it is a whole that is more knowable to sense-perception, and a universal is a kind of whole, comprehending many things within it, like parts. Much the same happens in relation of the name to the formula. A name, e.g. 'circle', means vaguely a sort of whole; its definition analyses this into particulars. Similarly a child begins by calling all men father, and all women mother, but later on distinguishes each of them. [ARIS6: 315 (184<sup>a</sup>10)]

What is “plain and clear” to *us* are the sensible particular representations. We cannot examine all possible particular representations, but we can examine some small number of them. Suppose we select some number of them – it matters not at all how many we select, as long as it is more than one, or what particular sensible representations we choose – and pretend these are all the representations we have ever seen. This collection then constitutes the whole of our hypothetical experience with representations – a hypothetical “universal” of representation. What can we say about this selection that is in common with every member within it?

Since our hypothetical collection is arbitrary, we must not focus in on specific details such as “all the representations are printed characters” or “all the representations have a color” because fine details like this are easy to abolish as common features by adding some other member to the collection that violates this kind of detail. It is not the specific sensible details with which we must be concerned, but rather some more abstract “features” of the collection. What could these be?

First of all, every member of our collection *is* a member of our collection *by definition*. It is we who chose the member representations, who chose how many of them there were to be, and so on. By our choices we have defined this “distinct and precisely delimited” collection. Membership in the collection is what they all have in common. It is true that the feature “every member representation is a member of the ‘universal’ collection” (which we are pretending constitutes our total experience with representations) is a simple tautology. But it is nonetheless a *useful* tautology because it is an exposition of the concept of a **manifold** of representations. The members of the collection are “connected” through this concept that they define a unique thing, namely the manifold. We say that the idea of the connection – or *nexus* – of this set of particular representations, and no other, gives the *form* of the manifold.

Precisely because “every member of our collection is a member of our collection” *is* a tautology, it is true for any possible collection of particular representations we might choose. Therefore the concept of the form of a manifold, and that this form is a *nexus* or connection of members in the manifold, can be asserted universally for all possible collections and is therefore true of representation in general. *Nexus* of form is a necessary characteristic of representation in general.

Now, for our second general property let us look at our hypothetical ‘universal’ collection itself. This collection is uniquely determined by the particular sensible representations that comprise it. If we take one of these away, or add another one, or exchange one of them for a different particular sensible representation, we get a different collection. What every possible collection has in common with any other is the following: the collection is **composed** of the specific representations it contains.

This statement is very similar to the statement given above, where we said the set of particular representations *and no other* gives the form of the manifold, with one important difference. *This time* the noun phrase in our predication is the collection itself *as a whole*. In the earlier predication, the noun phrase was “the set of particular representations” – which is a different concept from the concept of the collection-as-a-whole. The new idea introduced by this change of viewpoint is the concept that *this whole is a composition*. The individual sensible representations, taken together, are called the **matter of composition** since they serve to limit, i.e. to be the *determining* condition placed on, the specific *determined* whole. But we regard this whole as being our idea of representation-in-general. Thus, we get a second general necessary characteristic of representation-in-general: representation-in-general contains a matter of composition.

The idea of composition of matter pertains to the “what” the representation *represents*. The idea of *nexus* of form pertains to “how” the representation is represented, i.e. to the form of connection. The idea of representation-in-general *necessarily* contains *both* the idea of composition of matter and *nexus* of form. We now must ask: does the idea of representation-in-general necessarily contain any more ideas than these two?

The answer to this question is no. We obtained the necessity in the two auxiliary ideas stated above by being able to construct tautologies that alternately used our two available concepts (the concept of the set of particular sensible representations and the concept of the collection-as-a-whole) in the place of the noun phrase in the predication – the remaining concept in each case taking the position of the predicate phrase. We can form no other fecund tautologies using only two constituent concepts. (“The collection is the collection” etc. does not add anything *materially* new to our idea of representation-in-general). Composition of matter and *nexus* of form combine to give us a complete characterization of representation in general.

This is a point we have belabored, perhaps to excess, that Kant simply tossed out as a little-regarded footnote in *Critique of Pure Reason*:

All *combination (conjunctio)* is either *composition (compositio)* or *connection (nexus)*. The first is the synthesis of a manifold, the parts of which do not necessarily belong to each other. . . . The second combination (*nexus*) is the synthesis of manifolds, in so far as they *necessarily* belong to one another [KANT1: 155-156 fn (B: 201-202fn)].

It is easy to see that our deduction above of the coordinate parts of representation-in-general conforms in all particulars to the words of Kant's footnote. The particular sensible representations, by themselves, have no *necessary* unity (belonging) with any other particular sensible representations (we chose them arbitrarily); but, taken as a *set*, they *do* necessarily belong to each other *in terms of the existence of a manifold* – the collection-as-a-whole.

In summary, then, we have now seen that **the idea of representation-in-general is equivalent practically to the idea of the analytic division of a whole into two coordinate ideas – composition of matter** (“matter” for short) **and nexus of form** (“form” for short). This statement is a fundamental proposition (an *acroam*) of the Critical Philosophy.

## § 1.2 Comment on the Method Employed Above

Looking at the result just obtained, we have analyzed one indistinct idea (representation in general) in terms of two indistinct ideas (composition of matter and *nexus* of form). In doing so we made an exhibit of some instances of composition and *nexus* and so, while we cannot at this point claim to have a complete idea of either of these two constituents of general representation, we also must admit that we are not altogether ignorant of what these ideas mean. Our understanding of the idea of representation in general is, therefore, improved but incomplete.

Let us pause for a moment and reflect upon the method we have employed in the previous section. We have been employing some rather abstract reasoning, and we have not been hesitant about using ideas which, as of yet, we have not shown in connection with some doctrine of a metaphysical system such as we discussed in Chapter 2. Were we engaged in conventional mathematics, any competent referee would dismiss our method as “incorrect” and our conclusions to this point as unproved.

However, we are *not* engaged in a conventional mathematical exercise. Although the reasoning we have employed gives the impression of being rationalist speculation of the Leibniz type, I suggest to you that it is not, but rather that our reasoning is based on *empirical* considerations. How can I justify such a claim? What is “empirical” about anything we have done in Section 1.1?

Remember our topic. We are engaged in discovering and constructing a doctrine of the phenomenon of mind. If we were engaged in the study of, say, fire ants, it would not do at all to argue “imagine an arbitrary collection of particular fire ants”; we should have to go and actually collect some *real* fire ants for study. Fortunately for us, we are studying the phenomena of ideas, not the phenomena of fire ants. Where do we go to collect data about ideas? *Thought experiments*. If we re-read the quote made earlier from Book I of Aristotle’s *Physics*, we see that Aristotle is advocating an *empirical* approach to the study of nature. Since we have chosen to regard the phenomenon of mind as a part of Nature, self-reflection on the nature of our own ideas is one legitimate source of empirical data on the phenomenon of mind. It is in this sense that we are paying heed to Aristotle’s maxim to begin the study of Nature at the phenomenal level and advance from there to abstract theory. We begin with “what is clearer to us” and advance towards “what is clearer by nature.” (What Aristotle meant by this phrase was that every thing has a “nature” that we understand once we understand its substance; for us, this “thing” is epistemology).

While self-reflective thought experiments of the sort carried out in the previous section are legitimate exercises in our study, we must give prudent acknowledgment that this sort of exercise is far from being the only, or even the most important, element of an empirical study of the phenomenon of mind. If we draw empirical and rational conclusions from such a study (and we shall), the general principles that result must apply to human minds other than those of the experimenters. To put it another way, these principles will have consequences and these consequences will be testable by means other than self-reflection. Jean Piaget expressed this quite well:

What I have said so far may suggest that it can be helpful to make use of psychological data when we are considering the nature of knowledge. I should like now to say that it is more than helpful; it is indispensable. In fact, all epistemologists refer to psychological factors in their analysis, but for the most part their references to psychology are speculative and are not based on psychological research. I am convinced that all epistemology brings up factual problems as well as formal ones, and once factual problems are encountered, psychological findings become relevant and should be taken into account. The unfortunate thing for psychology is that everybody thinks of himself as a psychologist. As a result, when an epistemologist needs to call on some psychological aspect, he does not refer to psychological research and he does not consult psychologists; he depends on his own reflections. He puts together certain ideas and relationships within his own thinking, in his personal attempt to resolve the psychological problem that has arisen. I should like to cite some instances in epistemology where psychological findings can be pertinent . . .

The first principle of genetic epistemology, then, is this - to take psychology seriously. Taking psychology seriously means that, when a question of psychological fact arises, psychological research should be consulted instead of trying to invent a solution through private speculation. . .

I do not want to give the impression that genetic epistemology is based exclusively on psychology. On the contrary, logical formalization is absolutely essential every time that we carry out some

formalization . . . Our hypothesis is that there will be a correspondence between the psychological formation on the one hand, and the formalization on the other hand. But although we recognize the importance of formalization in epistemology, we also realize that formalization cannot be sufficient by itself [PIAG17: 7-10].

We must indeed pay serious and strict attention to the unified theme that Piaget describes so well.

Now let us look more closely at the thought experiment conducted in Section 1.1. More specifically, let us look at the “things” – the ideas of a manifold, of a *nexus* of form, of a composition of matter – that emerged during our “experiment.” We were able to imagine particular manifolds – which, if we had bothered to explicitly illustrate some specific ‘universal’ collections, would have had particular sensible representations – but because it was clear to us that each such specific manifold was arbitrary, and that we could construct an indefinite number of such cases, this led us to conceive the idea of a manifold-in-general. We can make sensible representations of specific manifolds, but not of the abstract manifold-in-general. A similar line of reasoning will show this is also true for the general ideas of composition of matter and *nexus* of form. Our explanation is **practical**; its meaning subsists in *what we did* to make the idea clearer.

We therefore began our thought experiment with one noumenal idea (representation-in-general) and ended up with a representation of this idea in terms of two other *practical* ideas. We were able to make expositions (examples) of these new ideas, and so we ‘feel’ that our level of understanding of the idea of representation-in-general is improved. Thus, our effort was not in vain even if we may be disappointed that we have only succeeded in explaining representation-in-general by *making* a representation (a specific exposition and not a general result couched in something other than that which we were trying to explain). This serves to illustrate my earlier statement that representation-in-general is a primitive idea.

But after this thought experiment we can ask ourselves if it must *always* be the case that the representation of an abstract idea will involve its re-presentation *as a coordinate combination of other ideas*. Is there something in the “nature” of an idea that its representation must always be bound up in a manifold of concepts with *other* concepts? We have discovered, in the course of our thought experiment, a possible *acroamatic principle* governing the “nature” of ideas. At this stage we can see this as only a possibility and, because we should not rush to take it as a fact, this acroamatic principle of representation of ideas through **combinations** will be held an hypothesis for now. But its possibility provides us with a research question we can (and will) explore. Let us therefore commit this proposition to memory by dignifying it as a formal acroam:

**Acroam of ideas:** The representation of a particular idea (the concept of a noumenal object) necessarily requires the representation of a manifold of concepts.



## § 2. The Notions of Matter and Form

In (§1) we deduced a representation of the idea of representation-in-general in which this idea is expressed in terms of two other ideas: as matter, viewed as composition of; and form, viewed as connection or *nexus* in, a manifold. The former idea was exhibited in terms of particular sensible representations that gave representation-in-general its composition; the latter idea was the idea that the elements of composition are *necessarily* joined (connected) in a specific way to form the greater whole. The idea of a composition speaks to the “what” of general representation, which can be viewed as addressing the existence of the manifold in representation in the *Dasein* (“entity-like”) sense of the word existence. The idea of a *nexus*, on the other hand, speaks to the “how” of general representation, i.e. the manner or way in which the manifold in representation exists, which is the *Existenz* sense of the word “existence.” This distinction is crucial and we must clearly understand its significance.

### § 2.1 Matter and Form in the Notion of “Existence”

In the English language the word “existence” has several quite separate interpretations, as the common dictionary definitions of this word make clear. The Germans are more fortunate in this regard since the German language contains a distinction (*Dasein* vs. *Existenz*) that removes some of the ambiguity the word in English is prone to suffer. Webster’s *New Twentieth Century Dictionary* (second edition, unabridged, 1962) defines “existence” as follows:

- existence**, n. [LL. *existentia*, existence, from L. *existere*, *existere*, to step or come forth, to stand forth; *ex*, out, and *sistere*, to cause to stand, to set, place]
1. the state of existing; the state or fact of being
  2. life; continuance of being
  3. occurrence; specific manifestation
  4. a manner of existing, being, or living, as, sharecroppers have a poor *existence*
  5. anything which exists; an entity; an actuality
  6. reality; truth; actuality [Obsolete].

Accompanying this definition, they give us the verb “exist” as:

- exist**, v.i. [L. *existere*, *existere*]
1. to be; to have real existence or being of any kind
  2. to live; to have life or animation; as, men cannot *exist* in water or fishes on land
  3. to occur; be present; be in a given condition or place.

I call the words *being*, *reality*, and *existence* the three troublesome words in philosophy; these three little words seem to have started more arguments among learned people than any other words in the language. If we were to take the trouble to list Webster’s definitions of “being” and

“reality” we would find that in English it is only a short trip before we see the three troublesome words defining themselves in terms of each other – a circle of definition.

In everyday speech we have little trouble using or understanding the word “existence” because which of its several senses of meaning that we are applying in a given context is usually clear from the context. But in erudite philosophical discourse when “existence” comes up it is often the case that the context in which the troublesome word is being used is *not* clear. The stage is then set for misunderstanding to occur, and the resulting polemics can be vastly amusing when we are not the ones who are engaged in the argument. As the saying goes, “there’s no fool like a learned fool.” The worst part of this situation is that it doesn’t seem to take very long before the arguments being set down start to flipflop between the separate connotations of “existence”; if a lengthy, run-on argument begins with “existence” being used in one sense, and part way through starts using it in another sense, the odds of actually communicating something meaningful plummet. So let us proceed with caution in the use of those words whose ideas lie at the foundations of metaphysics, remembering the words of Descartes:

. . . for the learned have a way of being so clever as to contrive to render themselves blind to things that are in their own nature evident, and known by the simplest peasant. This happens when they try to explain by something more evident those things that are self-evident. For what they do is either to explain something else, or nothing at all. . . Do not these people really seem to use magic words which have a hidden force that eludes the grasp of human apprehension? They define *motion*, a fact with which everyone is quite familiar, as *the actualization of what exists in potentiality, in so far as it is potential!* Now who understands these words? And who at the same time does not know what motion is?<sup>1</sup> Will not everyone admit that those philosophers have been trying to find a knot in a bulrush? [DESC2: 23-24]

Let us agree to *not* use the word “existence” when we mean “life.” This leaves us with only two connotations of the word “existence.” Now, when the word “existence” is used, there is always the concept of some thing, the existence of which we are talking about.<sup>2</sup> In speaking of this thing’s existence, we are either making a reference to the thing as an entity (e.g., “evil exists”), or we are talking about the *condition* or the *nature* of that thing (e.g., “evil exists in the hearts of the wicked”). In the first case our meaning is vested in the thing as an object. In the second case we are making a connection between the thing and other things; we are no longer speaking of the thing as entity, but are placing it in context with other things.

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<sup>1</sup> Descartes' reference is to Aristotle's *Physics*, Bk III (201<sup>a</sup>10). Apparently Descartes was not a keen student of Aristotle. The offending phrase actually does make perfect sense if, with the aid of strong coffee, a person has carefully studied Aristotle's *Physics*. (The word Aristotle actually used was *kinesis* - κίνησις - which has a much broader meaning than our "motion" in Greek. The answer to Descartes' question, "Who does not know what motion is?" is "Descartes"). However, Descartes *does* have a point here, and it is a valid one.

<sup>2</sup> Consider the role "existence" plays in the question, "Does Nothing exist?" It has been said that existentialists are afraid of Nothing, while analytic philosophers say there is nothing to be afraid of.

When we think of any object in terms of it being an entity, we are reflecting on the relationships of that object's existence *in Nature*, and such relationships are always two-fold, as: 1) matter by which the object is *determinable* (existence as *Dasein*); and 2) form by which the object is *determined* in the connection of its matter in various contexts that give it meaning (existence as *Existenz*) [KANT1: 219 (B: 322)]. Consider for a moment what thoughts *you* experience when you read the phrase "evil exists." Do your thoughts briefly pass over some *specific examples* – perhaps war, murder, the devil, cruelty, or the like – that you associate with the word "evil"? Examples such as these provide *matter* which composes your general idea of "evil." The fact that all of these examples *connect* in the object ("evil") gives this object its form.

Now think about the phrase "snerkluggum exists." I'll go out on a limb here and bet the first thoughts that went through your mind were something in the vicinity of, "*What* exists? What's a 'snerkluggum'?" Don't reach for the dictionary; I just made up the word. If your first reaction to this example is something like, "What? Snerkluggum doesn't *mean* anything!" I've illustrated my point about what we must have in order for the idea of an entity to have meaning.<sup>3</sup>

If your reaction was more along the lines of "snerkluggum doesn't mean *anything!*" what you have done is toss "snerkluggum" into a mental "bin" (figuratively speaking) marked "things that don't mean anything". This brings us to the second connotation of "existence." No matter what the object concept is, it appears to be utterly impossible for us to hold a concept of an object and at the same time *not* to mentally connect this object concept with other concepts of objects. The phrase "evil exists in the hearts of the wicked" conjures up an entire integrated picture – an object of sorts that we might call evil-exists-in-the-hearts-of-the-wicked. James argued this point in his examples of "thunder-breaking-on-silence-and-abolishing-it" and "the-pack-of-cards-is-on-the-table," which we briefly discussed in Chapter 1. James further elaborated this point using the example "Columbus discovered America in 1492":

Our psychological duty is to cling as closely as possible to the actual constitution of the thought we are studying. We may err as much by excess as by defect. If the kernel or "topic," Columbus, is in one way less than the thought's object, so in another way it may be more. That is, when named by the psychologist, it may mean much more than actually is present to the thought of which he is the reporter. Thus, for example, suppose you should go on to think: "He was a daring genius!" An ordinary psychologist would not hesitate to say that the object of your thought was still "Columbus." True, your thought is *about* Columbus. It "terminates" in Columbus, leads from and to the direct idea of Columbus. But for the moment it is not fully and immediately Columbus, it is only "he," or rather "he-was-a-daring-genius"; which, though it may be an unimportant difference for conversational purposes, is, for introspective psychology, as great a difference as there can be.

The object of every thought, then, is neither more nor less than all that the thought thinks, exactly as the thought thinks it, however complicated the matter, and however symbolic the manner of

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<sup>3</sup> Whether you realize it or not, "snerkluggum" *is* a "thing" to you now. Its matter consists of letters (s-n-e-r-k-l-u-g-g-u-m), and its form is the arrangement of these letters connected, in this order, as an entity we classify as "a-word-that-doesn't-mean-anything."

thinking may be. . .

The next point to make clear is that, *however complex the object may be, the thought of it is one undivided state of consciousness* [JAME2: 178-179].

When we have a case such as “evil-exists-in-the-hearts-of-the-wicked,” the particular entity object (“evil”) does not float alone, separate from the concepts expressed in the verb phrase of this example. The copula “exists” – in its *Existenz* mode – connects it with the other objects of this phrase in an overall whole of representation. Our Kantian term for this is *the manifold in the representation*.

Here our notions of matter and form manifest themselves again. The matter of this whole of representation is found in the particular representations of the objects of the composition (evil, hearts, the wicked), while, again, the form is found in the *nexus* of these representations as they are connected in the whole of the idea. The particular objects are thought as “existing” in the *Dasein* sense, but the whole exists, in the *Existenz* sense, as given by the form of the representation of the whole.

## § 2.2 Matter and Form in the Notions of “Being” and “Reality”

Regardless of how clear and distinct the representation of an entity object may be, the concept of this object is without context unless that representation *also* serves as part of the matter of composition of some greater object representation – i.e., in a manifold in the representation of some “object-of-the-whole.” Put another way, the representation of an entity gets its *real meaning* from its connection (*nexus*) in the representation of an *objective world*. Thus, fairies are “really” the fictitious characters in a fairy tale but are not real as high school janitors or taxi cab drivers. Achilles *may have been* an actual man – a great warrior in the time before Homer – but he could not have “really” been the son of a sea goddess. Even our example “snerkluggum exists” is not immune from this contextual requirement since we think of this as a nonsense phrase only through the action of representing “things-that-don’t-mean-anything” as an idea.

These epistemological ramifications of our representations can help us clear away the fog from the other two troublesome words – *being* and *reality*. Let us start with this notion of “being.” Our everyday usages of this word – e.g., “stop being a pest” or “act like a human being” – are easy enough to understand. But in philosophy the idea of “being” seems to inflate itself, at least in English, into what Margenau scoffed at as “a verb inflated into a most independent noun. To be *something* is usually comprehensible and definite – but, to be? Perhaps it was in answer to this query that Lewis Carroll invented the grin of Alice’s vanished cat” [MARG: 4]. An example of this “most independent noun,” familiar to far more people than any philosopher’s example, is found in the Old Testament where God introduces Himself to Moses as *Ego sum qui sum* (“I am

who am”)<sup>4</sup>.

“Being” entered into philosophy as an issue with Parmenides (c. 500 B.C.). Parmenides introduced into philosophy the idea of the *ón* (“being” or “creature”) as a kind of “being of all being.” (In Latin this idea is translated as *ens* – being). Metaphysics, says Aristotle, is the science of Being as Being.<sup>5</sup> This idea of the *ón* is the root of our word *ontology*.

We can now ask ourselves the meaning of Parmenides' discovery. The things - in Greek *πράγματα*, *prágmata* - manifest multiple predicates or properties to the senses. Things are colored, warm or cold, hard or soft, large or small, animals, trees, rocks, stars, fire, boats made by men. But when they are considered with another organ, with the mind or *noûs*, the things manifest a property which is of the greatest importance and common to all: before being white, or red, or warm, the things *are*. The things simply are. Being is seen to be an essential property of things, what has since been called a *real predicate*, a quality which manifests itself only to *noûs*. The things are now *ὄντα*, *entities* [MARI: 23].

The difficulty of this concept becomes evident as soon as we try to explain to ourselves what “the being of all being” *means*. This idea does not quite seem to mean “the universe”; that simple identification doesn’t work. (Is the universe a thing or is it the state *of* things? Neither choice fits all the subtle nuances of the notion of “the being of all being”). Recasting the *ón* as “the Entity of all entities” or as “the being of all entities” doesn’t help much, either. To really appreciate how twisted this idea can get, one can hardly do better than to read Plato’s *Parmenides* [PLAT8].

The situation simplifies considerably when we adopt Kant’s Copernican Perspective and move from Aristotle’s “science of Being as Being” to Kant’s epistemological view of ontology. From this perspective it is not some abstract object – “the Entity” – with which we have to deal, but with the representation of the Idea of “all things” in terms of Kant’s Rational Cosmology and Rational Theology. The former of these two branches of metaphysics proper enters into our consideration through the notion of necessity in the connections among the particular objects that compose the idea of “all things.” The latter branch, Rational Theology, enters into consideration in terms of why one obtains some one particular representation of the connection in the manifold-of-the-whole and not some other. And, as representation, this means our concern also relates to questions of *Dasein* and *Existenz* in the representation of the ideas of matter (as composition) and form (as *nexus* in the manifold). With Kant “being” is *not* a “real predicate” and the “being” of “things” is meaningful only in terms of their representation with respect to both *Dasein* and *Existenz*.

The situation is likewise for “reality” (our third troublesome word). To be real *to us*, a thing

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<sup>4</sup> *Ego sum qui sum* was the Latin rendition of Exodus [3:14] in the Vulgate translation, although the Israelite YHWH might have been equally well translated "He causes to be."

<sup>5</sup> Aristotle, *Metaphysics*, Bk. IV (1003<sup>a</sup>21).

must be both a “some-what” and a “some-how” – i.e., have a representation in terms of composition (matter) and *nexus* (form) as an object, *and* be placed in a matter-and-form combination of relationships in a manifold with other things, with respect to which it acquires a context. *Both* these representations are required in order to grant to the *object* of representation the title “real” – e.g. as a “physically real” thing<sup>6</sup> or as a “non-physically real” object (such as “information” or “probability” or “*Henry the Vth*”).

The hallucinations of a psychotic seem as real to him as the floor we stand on or the chair we sit in are to us. Reality is not something ‘given’ to us by the objects of our mental representations. Rather, reality is something we include in our mental representations of objects. There is not one single thing we know that is not real *in some sense of that word*. It is the context given to the representation of an object by the manifold in which it is connected that allows us to draw a distinction between the “physically real” – e.g., a rock in the driveway or a burst of lightning shredding the night – and the “non-physically real” – e.g., the ghost of Hamlet’s father or the “information” in this sentence. Reality is a notion we predicate *of* “being” – e.g., *to be real*.

Thus the notions of “being” and “reality” are both bound up with the representation of existence. Yet despite this formal similarity, “being” and “reality” also impart to us different connotations. What is it that distinguishes these two notions? We say that Immanuel Kant was a *real* person, but the ghost of Hamlet’s father is *not real*. In both cases the object (Kant or the ghost) “exists” but we think of these two objects as existing in fundamentally different ways – two different *modi* of existence.

The “reality” of the ghost of Hamlet’s father is a very restricted one; the ghost is “really” only a character in a play – an “imaginary being” that does not, never did, and never will “exist” in “real life.” He is as fictitious as *snerkluggum*. Kant, on the other hand, “is real” even though today he “exists only in our memories” through his writings and from historical accounts of his life. Both of these examples share a common feature. “Reality” in each is predicated based on the *capacity* of the object to affect us in experience and the *manner* in which this effect occurs. The ghost is “really” a character in a play because it is only by reading or seeing the play that we experience “the ghost of Hamlet’s father.” Kant is a “real person” because he once lived and was an immediate part of other peoples’ experiences, and the “experience of Kant” comes down to *us* through his writings and the writings of others – in an unbroken chain – that give credible testimony to the fact that “once there was a man named Kant.”

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<sup>6</sup> In the preface to the 1977 reprint of [MARG], Margenau commented: "The word 'physical' in the title of this book has long been regarded as a harmless and somewhat indiscriminate adjective, even redundant, leading to the comment: What other kind of reality could there be? Recently, however, I have occasionally had to face a different sort of inquiry, culminating in the question: Did you intend to suggest by the use of the qualifier "physical" that there might be other kinds of reality? To this I have answered: Yes."

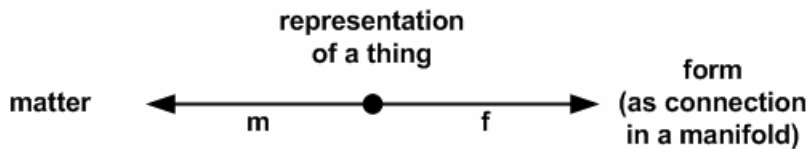
We can, therefore, say that the predication of “reality” in the concept of an object involves both the representation of that object *and a determining reason* for connecting that representation in the manifold of representations in a particular way such that its representation stands in congruence with the testimony of the senses in experience. The manner in which this connection to sense representation is made determines the “nature” of the “reality” of the object. The “reality” of an object is a notion contained *in* the concept of that object in such a way that a determining factor establishes the necessity of connecting the object representation in the manifold in the determined *nexus*. The principle of this determination is the necessity that the concept of the object be in agreement with the sensible experiences of that object, i.e., that the concept be regarded as *true* and *factual*.

### § 3. Second Level Analytic Representation

We can (and must) summarize the discussions of the previous two sections more formally. In doing so we will establish a theoretical construct – the second level analytic representation, or 2LAR<sup>7</sup> – that will prove to be a fundamental tool in the method of the Critical Philosophy.

In (§1) we viewed the idea of representation-in-general *as* a thing. In (§2) we discussed the representation *of* things in terms of the concepts of existence, being, and reality. What we must now do is to discuss the representation *of* things in terms of representation-in-general. Put in other terms, we need to express the description given in (§2) in terms of the ideas introduced in (§1).

The idea of the representation *of* a thing discussed earlier involves a division of the concept of the thing into two parts. In the first place, we have a representation of the thing as an entity of some sort in its own being (*Dasein*). We may call this the *matter* of the representation since this



**Figure 3.3.1: 1LAR Representation of a thing.** The matter of representation is its composition. The form of representation is its *nexus* in the manifold. 1LAR denotes ‘first level analytic representation.’

<sup>7</sup> The notation "2LAR" and the concept of the second level analytic representation in this work is credited to Palmquist's analysis of Kant's system [PALM1].

part of the thing's representation denotes *what* the representation is *about*. In the second place, the representation of a thing must represent the connection of this thing in a manifold of other representations of things, which gives the representation of the thing its context. This second part gives us the *form* of our representation through the representation of the thing's *Existenz* in the thinking Subject's "world model" – i.e., the representation of the thing's "place" in Nature. Figure 3.3.1 illustrates what has just been said. We may call a figure like this a *first level analytic representation* or 1LAR.

Now let us compare Figure 3.3.1 with our idea of representation-in-general. We saw earlier that representation-in-general also involves the ideas of matter and form. But for representation-in-general, the matter was viewed as a composition of sensible representations and the form was viewed as connection, or *nexus*, of these representations in the idea of a manifold. The representation of a thing differs from the idea of representation-in-general in that the representation of a thing is a specific (although not necessarily sensible) representation. In other words, the representation of a thing is a "species" of the "genus" of representation-in-general. Now, the specification of a species within a genus is always based on some differentiation that allows us to distinguish one species from another. The concept of a species must contain something particular to that species that is not contained within the idea of the genus. In the general representation of a thing, that new factor is the idea of the existence (in both its connotations) of that thing. This additional idea, when added into our idea of representation-in-general, adds an additional material and contextual connotation to the matter and form of representation-in-general.

We see the effect of this addition in the more specific descriptions of matter and form in Figure 3.3.1. The idea of composition of matter has become specialized to the idea of the specific representation of the composition of the *thing* in its *Dasein modus* of "being." The idea of the *nexus* of form – as connection in a manifold of some higher level of abstraction – has become the idea of the representation of the thing *in Nature*, as its *Existenz modus* of "being." In these two faces of the representation of a thing we see the echo of the ancient question of "the One and the Many."

The representation of Figure 3.3.1 still leaves unanswered two questions that are surely the most obviously in need of answers, namely what do we *mean* by the idea of "composition" and what do we *mean* by the idea of "connection" in a manifold? We have let these two ideas lie undisturbed since introducing them in (§1); now they must be dealt with if we are to make further progress. In doing so we will arrive at four ideas that run throughout Kant's presentation of the Critical Philosophy in all his works: Quantity, Quality, Relation, and Modality.



### § 3.1 The Representations of Quality and Quantity

We begin with the idea of the representation of the composition of a thing. As a representation, we may follow the dictates of our idea of representation-in-general and perform a division of this idea into a matter and a form. Since it is our overall purpose to achieve a representation of the thing, we may regard this second step of division as representations of the *matter of the matter* of the representation and the *form of the matter* of the representation. Following Kant's terminology, we shall name the former of these the **Quality** in the representation, and we shall name the latter of these the **Quantity** in the representation.

The representation of the matter of a thing is the representation of the thing in terms of the idea of composition in representation-in-general and, more specifically, as the idea of the composition of the thing with regard to its being a "what" in the *Dasein* sense. Recall that we developed the idea of the matter of representation-in-general in terms of specific representations which were said to make up the attributes that 'went into' the general idea of representation. These attributes, and no others, were fundamental to the existence of the specific object being represented. The idea of Quality, then, is an idea that concerns the fundamental attributes that are specific to the general idea of the *Dasein* of the thing.

Since we are not yet concerned with the representation of some specific thing – e.g., a bird, or a word, or a thought – we cannot view this idea of a fundamental attribute in such specific terms as color, or hardness, or the like. Instead we must ask: What are the most general attributes that go into (compose) the idea of the composition of a thing with regard to the idea of its *Dasein*? If we have some specific representation (e.g., the color red), what are the most general attributes of this specific representation that pertain to the matter of the *Dasein* of the thing which is the object of our overall representation?

If we have some specific representation, such as "redness", the most general statement we can apply to this representation is that it either is or is not an attribute of the thing. The basis of such a predication lies *in the determination* that this specific attribute is in *agreement* with the representation of the thing or that this attribute is in *opposition* with the representation of the thing. The idea of the agreement or the opposition of a represented attribute with the representation of the overall thing is an idea of what we could call the "state of being" of the thing as it is being represented.

These ideas of agreement and opposition seem, at first glance, to be clear and obvious ideas that we can apply to the complete representation of Quality in general. However, this seemliness is at least somewhat deceptive, a fact that becomes clear if we ask ourselves whether, by these terms, we are saying the composition of the Quality attribute of the thing represented is a necessary composition or merely a permissible composition. Put another way, suppose I say that the representation of a Quality attribute *Y* is *not in opposition* to the representation *X* of a thing.

Does “not in opposition” necessarily imply “X is Y” is always a true predication? Clearly the answer to this question is *no*. Being male is not in opposition to being a human being, but “human beings are male” is not a necessarily true statement. (Truth, we recall, is the congruence of the cognition with its object).

At the root of this issue is the relationship between the ideas of agreement and opposition. These two ideas are *contrary* to each other, but they are not *contradictory* to each other. Two concepts, X and Y, are said to be contradictory if both cannot be held true at the same time and if one or the other must always be held to be true with the other *necessarily* being held to be false. If X and Y are contradictory, then asserting not-X necessarily implies Y.

When two concepts are merely contrary, one or the other must be held to be true, but this holding-to-be-true does not necessarily imply we must hold the other to be false. For example, the propositions “some x are y” and “some x are not-y” are contrary to each other but not contradictory since it is possible for both propositions to be true at the same time. The proposition “some x are y AND some x are not-y” is called a *subcontrary* proposition.

**Agreement** and **opposition** do not exhaust the “state of being” of the represented object in terms of the representation of its Quality. To complete our set of possible general representations of the idea of Quality, we must add a third idea – **subcontrarity**.

*Comment:* It might be objected that we can always *force* the representation of a Quality of a thing to be restricted to only those representations of attributes that are necessarily in agreement or are necessarily in opposition with the representation of the thing. In this view, if a particular representation of a Quality attribute is not *necessarily* in agreement or in opposition, that represented attribute is not to be viewed as a Quality of the thing. From the viewpoint of pure formal logic, this can be done. However, *the phenomenon of mind is capable of subcontrarity in its representations of Quality*. We are not studying how we *should* think; we are studying how we *do* think. Therefore subcontrarity must be admitted on *real* grounds as a general attribute of Quality in the representation of a thing. □

Now let us turn to the idea of Quantity. For representation-in-general the idea of form involved the necessary connection of specific particular representations in the representation of a whole – the manifold in representation. Quantity, as we said earlier, is the form of the matter of the representation of a thing. It pertains, therefore, to the idea of a manifold as this concept relates to the composition of matter in the *Dasein* of the represented thing.

We can easily see that there are two manners in which we can view a represented thing. In the first place, we can view the representation as *identifying the thing*. Regardless of the many details that make up the representation of, say, a tree – e.g., the trunk, the branches, the leaves,

etc. – *the* thing is perceived in the singular, e.g., *the* tree. This is the notion of the “oneness” of the object of representation, i.e., that despite the “many-ness” of the coordinate details of the thing, there is a unity among these details. **Identification** is therefore a general feature of the form of the matter of composition.

In contrast, we may also view the form of composition in terms of its divers coordinate parts. This is the view that within the unity of identification there is a “many-ness” of detail from which the characterization of the object of representation can be made. The representation of detail requires, in turn, the ability of **differentiation**. The trunk of the tree can be differentiated from the branches of the tree, the branches from the leaves, and so on. Within James’ “thunder-breaking-upon-silence-and-abolishing-it” we can pick out the thunder, the silence, etc.

These ancient ideas of “the one” and “the many” illustrate the appropriateness of naming the form of the matter of composition by the title Quantity. But to the ideas of the identification and the differentiation in the representation of Quantity, we must add a third idea: that of “the many *in* the one.” To represent the object as *an* object is to do one thing; to represent the *parts* of the object is to do quite another and distinct thing. But in making these two representations, we must not lose sight of the fact that the parts are parts *of* the object, and that the representation of form must contain also the idea of the **integration** of the parts in the whole. The first two ideas are of an analytic flavor; the idea of integration has a synthetic flavor, a “putting together” of the entire picture of the represented thing. Thus, like Quality, we find three general ideas in the representation of the form of the matter of composition – identification, differentiation, and integration.

### § 3.2 The Representations of Relation and Modality

Next we turn to the representation of the thing in terms of the “how” of its *Existenz*, i.e., as the thing in its connection in the greater manifold of all things. As before, we proceed by dividing the representation of *nexus* into a *form of the form* of representation, which we will call the idea of **Relation**, and a *matter of the form* of representation, which we will call the idea of **Modality**.

In some ways the idea of Relation is similar to the idea of the composition of Quantity. Both ideas are ideas of form. A mere collection of unconnected representations is only an aggregate, a heap of individual representations possessing no context. The connection of such a collection by Relation brings a unity and order to the individual things that we call the manifold in Nature. For the connections of Relation we may readily identify two meaningful connotations of connection.

In the first place, connection in the manifold in Nature can be viewed as the connection of representations in *a* thing. Connection of this sort is viewed in this context as “the nature *of* the thing” and we may call such a connection the **internal** relations within the thing. Connections of Relation in this sense differ from the composition of Quantity in that Quantity addresses the

representation as a *what*, while Relation addresses the representation of a *how*. It is one thing to represent some *X* as the composition of a *w*, a *y*, and a *z*; it is something else to represent the connection of *w*, *y*, and *z* as *necessarily belonging* to each other *a priori* – a necessity that is missing from the aggregation of these sub-representations in composition.

In the second place, we may view Relation in the manifold in Nature as connection among *different* things. These things, while individual, are viewed under the *nexus* of Relation as nonetheless necessarily belonging to each other by virtue of necessary **external** relations – i.e., as bound together through the representation of something not contained within the representation of any of the individual things. For example, if I say “the shoes hurt my feet,” the concept of “hurt” is not contained in either the concept of the shoes or the concept of my feet. Rather, it is a concept of an external Relation between the shoes and my feet.

Examining these two ideas of the internal and the external forms of Relation we find that, once again, these two ideas do not constitute a complete set of the forms of connection in the general manifold. Consider, for example, the predication, “the table is heavy.” The concept of ‘being heavy’ is a concept viewed as “contained in” the concept of the table, an internal Relation. However, I can also predicate, “the desk is heavy.” Here we find the *same* concept – being heavy – as internal in the concept of the desk. But, by virtue of both objects – the table and the desk – containing the common concept of ‘being heavy,’ the concepts of the table and that of the desk share an external Relation, i.e. as ‘things that are heavy’. This places the common representation of ‘being heavy’ in a peculiar position in the manifold in Nature, namely as a Relation that is simultaneously internal and external. We will designate such a Relation by the term **transitive** Relation. The internal, the external, and the transitive constitute the complete set of ideas within the general title of the idea of Relation.

Lastly we come to the idea of the matter of the form of representation. The idea of Modality is a peculiar and somewhat difficult concept inasmuch as this idea presents us with the question of what it is that goes into the make-up of a connection of form. This issue is perhaps best illustrated by example. If I predicate, “the apple is red,” this predication is simple and obvious. It “makes sense.” However, if we examine the concept of “apple” and the concept of “red” we find in these concepts nothing that would seem to forbid the predication, “the red is apple.” Yet this second predication is nonsensical. Why is the first predication acceptable as a possible representation while the second is not?

The answer to this question is not to be found in the idea of Relation. The internal, the external, and the transitive are not ideas that contain anything which requires our predication of the-apple-is-red while also forbidding the-red-is-apple. Relation may be viewed as a kind of “physical” connection, but the determination that “the apple” is to be the subject phrase and “is

red” is to be the verb phrase is a “metaphysical” rather than a “physical” connection – a matter of form.

Since we are at present engaged in studying “that which is clearer to us” we can let this predication serve as an exemplar and view connection in terms of the idea of predications. If we examine this idea we immediately find two ideas contained within it. In the first place, we have the idea of something that is **determinable**. In our the-apple-is-red example, “apple” and “red” are concepts that “go into” the predication. Once the predication has been made the meaning of these concepts relative to each other is fixed, but prior to the making of the predication the relative meaning of these terms has no context. Thus, with regard to representation, these terms are the determinables.

In the second place, we have the idea of something “in” the representation itself as a **determination**. Suppose we take the copula “is” from our example and look at it as some sort of functional form, e.g.,

\_\_\_\_\_ is \_\_\_\_\_ .

The blank spaces in this expression are to be filled by the determinables and, once they are each placed in their respective blanks, they may be said to be determined with regard to each other. Thus, the form shown above can be viewed as an example of determination in representation.

Yet this division of connection into a determinable and a determination is obviously not the complete picture because all we have done is to assign general names to the roles specific parts in a representation play. Something else – something which dictates that determinable *X* is to “go into the first slot”, that determinable *Y* is to “go into the second slot”, and that the “is” structure shown above is to be applied as the determination – is clearly required. There must be, in other words, a *determining* reason why *X-Y* is a proper connection and *Y-X* is not, and this determining reason must be viewed as a factor in the representation of connection. We may call this third idea the **determining factor**.

### § 3.3 The 2LAR Structure

We find specific examples of the general structure described above throughout Kant’s presentation of his theory in his three great Critiques: *Critique of Pure Reason*, *Critique of Practical Reason*, and *Critique of Judgment*. A similar presentation is also found in his *Metaphysical Foundations of Natural Science* and in *The Metaphysics of Morals*. Since the 2LAR structure is merely a generalized representation of the representation of a thing, and since a theory is nothing else than the representation of a doctrine, Kant’s widespread employment of this kind of organization in his doctrine is not surprising. Indeed, he seemed to take for granted that his

readers would have no trouble with understanding this method of presentation – that this structure is more or less self-evident – and so he hardly bothered to explain his various “tables” (as he called them) or his terms Quantity, Quality, Relation, and Modality. But this structure is *not* as immediately self-evident as Kant seemed to think. That many philosophers therefore harshly criticized what can be perceived as his “abracadabra - *presto!*” presentation of important ideas, or simply misunderstood what he was talking about, seemed to genuinely surprise him.

The 2LAR structure is illustrated in Figure 3.3.2; it will play a fundamental role throughout our treatise on the Critical Philosophy. Consequently it is worthwhile to summarize the place of this idea in our theory. First of all, the ideas depicted in the representation 2LAR are *not* the primitive elements of our transcendental metaphysics. We have been following Aristotle’s *dictum* and examining “that which is clearer to us” rather than “that which is clearer by nature.” In our analysis of the idea of the representation of a thing, we have tried to remain as general as we could in extracting the properties that seem common to all representations of things, but it should be remembered that the twelve ideas listed under the four “titles” of the 2LAR are the products of making an abstraction rather than the “basic elements” that make abstraction possible. We can expect that our theory will follow the form of this 2LAR, but that its basic elements will be of a much more primitive nature. To use an analogy, we can have the idea of something called “the cardinal numbers” but this idea is eventually grounded in terms of more primitive ideas, e.g. such as those involved in making an abstraction from counting by pairing up things with one’s fingers. We will see later that the primitive elements of representation are those factors that stand necessary for the possibility of human experience.

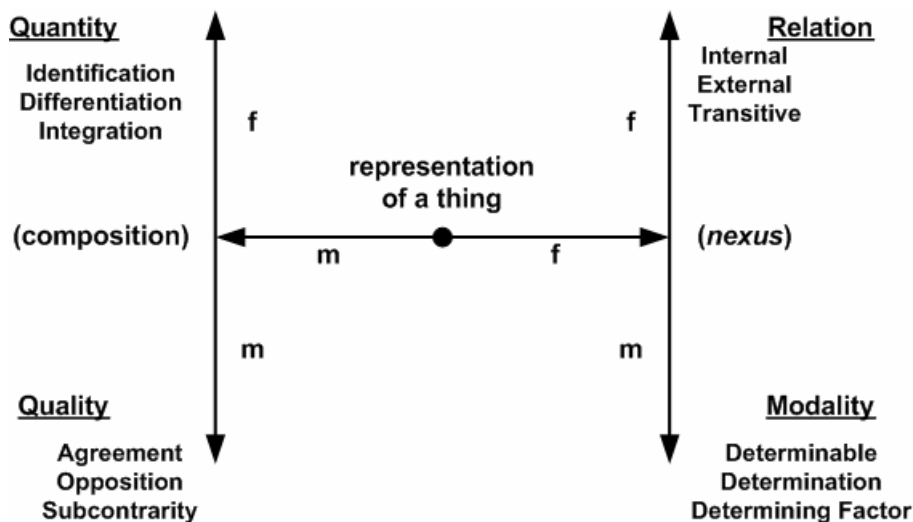


Figure 3.3.2 The 2LAR Structure of Representation

Secondly, let us remind ourselves of how we moved from the idea of representation-in-general to this idea of the general representation of a thing. For representation-in-general we performed a simple division of this idea in obtaining an exposition of it in terms of matter and form. These latter ideas we found by examining what we mean by ‘representation’ and we put them into the abstract idea of representation-in-general. The representation of representation-in-general in terms of these two ideas we called a *first level* analytical representation (a 1LAR).

To move from representation-in-general to the general representation of a thing, we had to add another idea – the idea of a ‘thing.’ This amounts to a *specification* of representation to a particular topic, i.e., representation as *applied to* things. This additional specification allowed us to perform a second division of the representation 1LAR to obtain our 2LAR structure. We can expect that if we add additional specifications to the idea of a thing we will be able to represent these additional specifications by additional divisions – into a 3LAR structure, a 4LAR structure, and so on. Because each additional level would involve the splitting of each arrowhead in Figure 3.3.2 into two parts – another matter and form division – we should ask why each of the four titles of Quantity, Quality, Relation, and Modality in Figure 3.3.2 were given *three* supporting ideas.

To address this question, we must look at the 2LAR from a *practical* viewpoint – i.e., what we *did* – rather than a *theoretical* viewpoint – i.e., how it was *done*. Our division of the representation 1LAR to obtain the 2LAR was an analytical action, dividing our representation up into a matter-of-the-matter, a form-of-the-matter, a form-of-the-form, and a matter-of-the-form based on the idea of a thing as something that exists in some general fashion expressed conjointly in terms of *Dasein* and *Existenz*. For these four titles to have any meaning for us we found ourselves asking what ideas seem to be contained in these ideas. Consequently we found ourselves analyzing each of these four titles by disjunction – division into an aggregate of coordinate ideas that taken as a whole provided a complete description of the title idea. This action allowed us to *terminate* the representation of the representation of a thing at the second level of division.

*Must* we terminate a representation at the 2LAR level? No, not necessarily. The more specific our idea of the thing represented is, the more ideas we bring out and the farther we might proceed with its analysis. There seems to be in principle no limit to the number of levels of analytic representation that may be possible for some object of thought. *May* we terminate a representation at the 2LAR level? Of course. But if we do it is because of some *reason* we hold within ourselves that motivates us to terminate the analysis at the second level. That our general 2LAR terminates with three ideas under each title has no bearing on the fact that analysis of a more specific thing might possibly involve additional levels, and that continued division in terms of matter and form (e.g., the matter-of-the-matter-of-the-matter and the form-of-the-matter-of-

the-matter, etc.) might be possible. Indeed, we might even perform the matter-and-form division on the three *synthetic* ideas under each title. That it is possible for us to conceive of doing so points out that we have not established *necessity* and *universality* for the 2LAR of Figure 3.3.2. This, in turn, warns us that the 2LAR presented in this figure is *not* epistemologically primitive in our theory. It belongs to the doctrine of method and not to the doctrine of elements.

## § 4. The Making of Representations

In (§2 - §3) we have been concerned with representation as a representation, i.e., as an *outcome*. We must also consider the process from which this outcome is a result. In other words, we must now look at the idea of representation in its connotation as a *mental act*. As before, we will pay heed to Aristotle and begin with “what is clearer to us.”

We are in no short supply of words – thinking, judgment, reasoning, intuition, feeling, etc. – that are in some fashion bound up with the idea of mental activity. But we are at this point still far from being able to describe exactly how this tangle of ideas comes together as or in a mental act. We will first require some clearer representation of the meaning of the idea of mental activity. In short, we must in a manner of speaking look at representation-as-a-verb.

In this examination we will do well to proceed with caution. In the first place, if we start out with trying to develop a representation of a mental act what we would be doing is nothing else than representing the idea of a mental act as a *thing*. But if we wish do so, the 2LAR of Figure 3.3.2 tells us that this is not a simple undertaking. The twelve sub-ideas in the 2LAR representation of a thing are logically capable of being combined in 81 different ways<sup>1</sup> and this large number of combinations is merely the logical possibility before we add the additional complication of specifying, or trying to specify, what the “new” idea or ideas will be that turn the general and rather content-free notion of a ‘thing’ into “a thing which is a mental act.” We are in no position to say, at this point, whether the specifying idea or ideas will add to or take away from the possible combinatorial complexity of the representation of a mental act as a thing, but we should acknowledge the possibility that there may, in fact, be many different kinds of “mental acts.”

At the other possible extreme, it may be that there is no such thing as a ‘mental act’ in the sense of it being viewed as an “isolated” mental act. William James found such an idea objectionable, proposing instead that mental processes be viewed as a “stream of thought.” We

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<sup>1</sup> A representation of a thing requires Quantity, Quality, Relation, and Modality at the level of detail in a 2LAR. We have discovered no grounds at this point for expecting "correlation" among these four titles, and so we can select one synthesizing idea under each title independently of the other titles, which is how the logical possibility of  $81 = 3^4$  different combinations arises.



have, at this point in our investigation, no ground for supposing that the idea of an “isolated” mental act has any objective validity (i.e., that such an idea is an objectively valid concept when placed within an overall framework of a theory of the phenomenon of mind). While it surely seems as if the idea of an isolated mental act is a valid concept, it would be premature at this point to presume the validity of this idea.

We are on firmer ground with respect to the idea of “making a representation.” Kant’s Copernican hypothesis – that mind is the determining factor in representation – presupposes the possibility of making representations. The idea of “making a representation” is necessary for the possibility of the Copernican perspective having real validity. If the idea of making a representation is invalid, then so is the Critical Philosophy itself and, in this case, it is difficult to see how we can avoid ending up with anything that would not fall victim to Hume’s analysis and therefore in skepticism. Because the idea of “making a representation” is “clearer to us” than the more remote idea of a “mental act” we would do well to start with the former rather than the latter.

The idea of “making a representation” surely seems to imply the necessity for some kind of mental activity and we can suppose that mental acts are in some sense a part of mental activity. But in *what* way and in *what* form mental acts might enter into mental activity remains to be seen, and we shall begin our investigation of this question by examining the character of the making of a representation.

#### § 4.1 Analytic, Synthetic and Anasynthetic Representation

Let us take a look at the arguments that went into our deduction of the representation of representations in the previous sections. In our examination of the idea of representation-in-general we were able to express this idea in terms of two other ideas (matter and form) and we were satisfied to conclude that these two ideas were in agreement with what we “had in mind” as our idea of representation-in-general. The ideas of matter and form, in other words, helped us to *clarify*, to some degree, what we meant by “representation-in-general.”

Now, were the ideas of matter and form somehow hiding within our idea of representation-in-general to begin with, or did we make the idea of representation-in-general out of these ideas? If it was the latter, then we can conclude that the idea of “making a representation” includes the idea of being able to make a *distinct* representation. This is a rather trivial step inasmuch as we have already conceded, by way of the Copernican hypothesis, the validity of the idea of making a representation. All we have done is to add the adjective ‘distinct’ to the idea of “representation” – i.e., to state explicitly that we are capable of distinguishing among representations. But this is a step we took previously in representing the 2LAR structure when we conceded identification and integration as ideas contained under the idea of Quantity, and the idea of the internal under the

idea of Relation.

If, on the other hand, we say that matter and form were originally contained in the idea of representation-in-general, then what we did earlier merely amounts to pulling these ideas “out” of the first idea, i.e., what we did was to *make the representation* more *distinct*. This is, again, a rather trivial finding and one that was implicit in the 2LAR structure with the ideas of identification and differentiation (under Quantity) and the idea of the internal (under Relation). However, if we wish to say that matter and form were already contained “in” the idea of representation-in-general, we must then ask the obvious question: Where did we get the idea of representation-in-general in the first place?

The *Object* of the idea of representation-in-general is not an object of the senses; it is a *noumenon*. Therefore representation-in-general is not an *empirically given* concept. It must then be either a *made concept* or an *innate idea* (i.e., an “idea we were born with”). Of these two possibilities we can rather quickly rule out the latter because if representation-in-general were an innate idea in the Leibniz or Lockean sense it would be an idea that everyone would necessarily know and understand to such an innate degree that the existence of people who hold “realist” views of nature would be an unexplainable paradox. And the number of people who, at some point in their lives, hold realist views is not some, many, or even most people; it is *all* people. Infants and small children are, in fact, uncritical realists:

The child is a realist, since he supposes thought to be inseparable from its object, names from the things named, and dreams to be external. His realism consists in a spontaneous and immediate tendency to confuse the sign and the thing signified, internal and external, and the psychical and the physical.

The results of this realism are twofold. Firstly, the limits the child draws between the self and the external world are much less rigid than our own; secondly, the realism is further extended by “participations” and spontaneous ideas of a magical nature [PIAG24: 124].

For us, an idea or a word is in the mind and the thing it represents is in the world of sense perception. Also words and certain ideas are in the mind of everybody, whilst other ideas are peculiar to one's own thought. For a child, thoughts, images and words, though distinguished to a certain degree from things, are none the less situated in the things. The continuous steps of this evolution may be assigned to four phases: (1) a phase of *absolute realism*, during which no attempt is made to distinguish the instruments of thought and where objects alone appear to exist; (2) a phase of *immediate realism*, during which the instruments of thought are distinguished from the things but are situated in the things; (3) a phase of *mediate realism*, during which the instruments of thought are still regarded as a kind of things and are situated both in the body and in the surrounding air; and finally (4), a phase of *subjectivism* or *relativism*, during which the instruments of thought are situated within ourselves. In this sense then, the child begins by confusing his self - or his thought - with the world, and then comes to distinguish the two terms from each other [PIAG24: 126].

These empirical findings of Piaget’s studies of young children would be extraordinary paradoxes if the idea of representation-in-general were innate in the sense of the classical rationalist philosophers. We can therefore conclude that representation-in-general is a made concept.

This conclusion does not necessarily imply that the idea of representation-in-general was originally made *from* the ideas of matter and form. Indeed, the origin of this idea in my own personal case seems to have come from quite another original direction altogether, with the ideas of matter and form added in later, a situation revealed by the discussion in (§1.1). However, our development of the idea of representation-in-general does point out that: 1) the ability to make representations is an empirical fact; and, 2) the ability to extract representations *from* other representations is also an empirical fact. (This second point is demonstrated by the fact that we obtained our representation of representation-in-general precisely by extracting certain other representations – representations that were not ‘matter’ and ‘form’ – from this general idea).

When we take a given representation and extract particular representations *from* it, regarding these particular representations as already contained “in” the first representation, we may call this process an act of **analytic representation**. In such an act we regard the end result of this process as containing nothing fundamentally new, i.e., containing no “information” that was not in some sense already present in the first representation. Analytic representation merely *clarifies*. It “makes a representation distinct.” Contrariwise, when we take two or more previously unconnected representations and unite them in a more general representation, we may call this process an act of **synthetic representation**. In this act, something “new” *is* produced, namely the unity of previously separate and independent representations in a single representation. This act “makes a distinct representation.” Analytic and synthetic representations, as acts, are distinguished from each other by what we regard to be the “given” or “starting point.” If we begin with a concept and extract other concepts from it, this is analytic representation. If we begin with two or more concepts and combine them in the representation of an object, this is synthetic representation.

There is, again, a third case we must recognize. This is the case where we begin with a representation, extract representations from it, synthesize two or more new representations from these, and then *unite these new representations back in the original representation*. This process is indeed the one we followed in deducing our representation of the idea of representation-in-general in terms of matter and form. This process amounts to a “re-presentation” of the original representation and it amounts to re-expressing the original representation in terms of different *characteristics* of the object it represents.

In both analytic and synthetic representation one or more new representations are *produced* (either concepts that were not explicitly represented “outside” their “parent representation” previously, or a concept of a new object) and the process may be viewed as “terminating” in the new representation or representations. The third case also produces new representations, but it terminates in the object *where it began*. This is enough of a distinction to merit giving the third case a name of its own. Inasmuch as this case is a kind of union of both analytic and synthetic

representation, it seems appropriate to call it **anasynthetic re-presentation**.

*Comment:* Kant appears to have recognized all three of the processes discussed above but he seems to have regarded anasynthetic re-presentation as merely another case of synthesis, e.g.,

To synthesis belongs the making distinct of Objects, to analysis belongs the making distinct of concepts. Here the whole precedes the parts, there the parts precede the whole. The philosopher only makes given concepts distinct. Sometimes one proceeds synthetically, even when the concept one wants to make distinct in this manner is already given. This often takes place with propositions of experience when one is not satisfied with the characteristics already thought in a given concept. [KANT8: 70 (9: 64)].

However, coining a new word – anasynthetic – seems a small price to pay for distinguishing the original making of a representation from the re-making of its characteristics’ representations.

## § 4.2 Kant’s *Verstandes - Actus*

Our discussion of analytic, synthetic, and anasynthetic representations has been expressed in terms of the representations that are their “incomes” and “outcomes.” This naturally leads to the question: What is contained “in” the representative act that produces such an outcome from such an income? How, in other words, do we represent the representing act?

In considering this question Kant speaks of three logical *Verstandes - Actus* or “acts of understanding” by which “concepts are generated as to their form” [KANT8: 100 (9: 94)]. These acts are: 1) Comparison (*Comparison*) – the “likening of representations to one another in relationship to the unity of consciousness”; 2) Reflexion – deliberating on (*Überlegung*) or “going back over” representations to discover “how they can be apprehended in one consciousness”; and 3) Abstraction – “the segregating of everything by which given representations differ.” Taken together these three logical acts describe a three-fold process for the making of new representations (regardless of whether the new representation is the outcome of analytic, synthetic, or anasynthetic representation).

### Comparison

The idea of *comparison* is one that, at first glance, appears to be intuitively simple and even primitive. We all “know” what it is to compare two things. Even Aristotle, who was notoriously pedantic about definitions, did not see fit to expound at length on the idea of comparison. The dictionary definition of this idea describes it as “the act of considering relations between things in order to examine their similarities or differences.” Kant was content to let the description given above stand on its own in his *Logik*, although he did extend this description in *Critique of Pure*

*Reason:*

The relationships, however, in which the concepts in a state of mind can belong to each other are those of identity and difference, of agreement and opposition, of the inner and outer, and finally of the determinable and the determination (matter and form). . . . To be sure, one could therefore say that *logical reflexion* is a mere *Comparison*, for in its case there is complete abstraction from the cognitive power to which the given representations belong, and they are thus to be treated the same as far as their seat in the mind is concerned [KANT1a: 367-368 (B: 317-319)].

Comparison, as an act, produces a relationship, but in a sense different from that which we used earlier in describing the title of Relation in our general representation of the representation-of-a-thing. The relationship produced by comparison, Kant tells us, has a domain that spans *all four* of the general titles of Quantity, Quality, Relation, and Modality in Figure 3.3.2.

Unlike Kant, Hegel seemed to be more concerned about establishing what is meant by the idea of “comparison” as an object:

Difference is, first of all (1) immediate difference, i.e., Diversity or Variety. In Diversity the different things are each individually what they are, and unaffected by the relation in which they stand to each other. This relation is therefore external to them. In consequence of the various things being thus indifferent to the difference between them, it falls outside them into a third thing, the agent of Comparison. This external difference, as an identity of the objects related, is Likeness; as a non-identity of them, is Unlikeness.

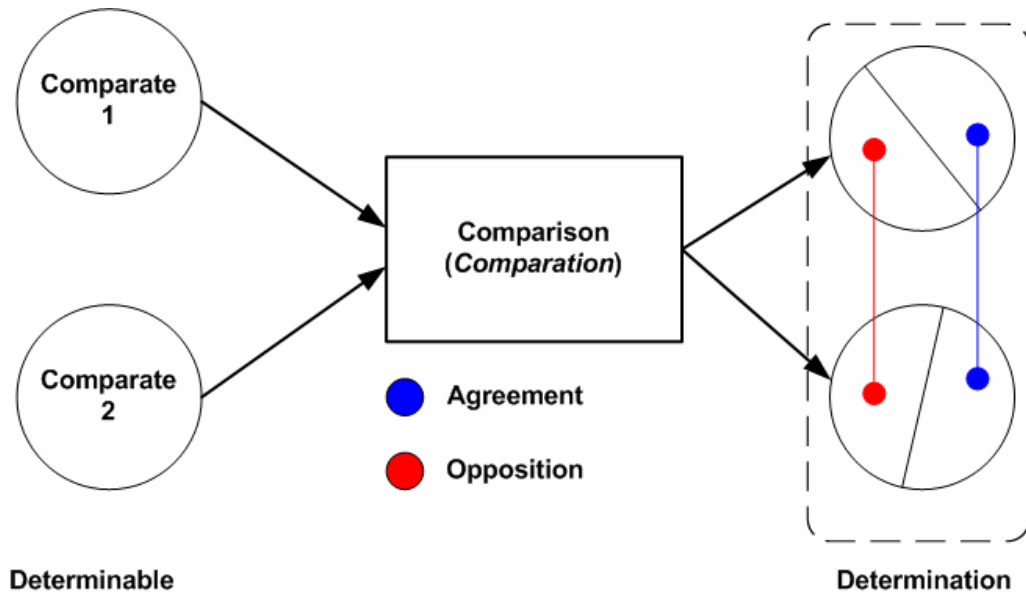
The gap which understanding allows to divide these characteristics is so great that although comparison has one and the same substratum for likeness and unlikeness, which are explained to be different aspects and points of view in it, still likeness by itself is the first of the elements alone, viz. identity, and unlikeness by itself is difference [HEGE1: 169 (§ 117)].

Hegel’s rationalist view embeds the ideas of “likeness” and “unlikeness” *in* a “thing” called comparison, while, of course, the Kantian view makes the correspondents to these Hegelian ideas part and parcel of the representation of a thing, i.e., representations that are the eventual outcome *of* comparison. In both views, however, we do find the idea that the act of comparison presupposes two or more *comparates*<sup>2</sup> capable of being viewed as separate “incomes” of the process, and that comparison (whether it is a Hegelian “thing” or a Kantian “act”) is the tie that binds these comparates in a unity (a unity which for Hegel involves his Absolute idea of Essence, and which for Kant involves the idea of a manifold in representation).

The point of this knotting of the bulrush (as Descartes might say) is this: The “primitive” and “simple” idea of the act of making a comparison is far more fertile in producing questions we must address than is initially evident. Figure 3.4.1 illustrates Kant’s description of the act of comparison. In this illustration we can, first of all, find all four of our titles of Quantity, Quality, Relation, and Modality represented in one fashion or another (which we should expect since we are now representing an object called “comparison”).

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<sup>2</sup> Comparete [L. *comparatus*] is a term (now generally obsolete) which was used in classical logic to denote one of two things that are compared.



**Figure 3.4.1** Illustration of the Act of Comparison

The determinable (the uncomparated representations coming into the process) and the determination (the outcome – note the singular tense – of the comparison) are clearly visible in this diagram. Within the determination we have the Quality representation of subcontrarity (both agreement and opposition present within the same representation) and a depiction of internal Relation (the colored lines connecting the two circles; the representation is internal because it is a representation *within* the determination). Quantity representation is given by the drawings of the geometric figures themselves (differentiation), the figure as a whole (identification as act of comparison), and by the connections among the particular given figures (integration).

Second, let us consider the interpretation of what this figure is meant to convey. The role of the two determinable comparates is clear enough; these are the representations being compared. The determination, on the other hand, requires explanation. The determination is neither the first compare, nor the second, nor even both at once. What is represented in the determination is the outcome *of* the comparison, i.e., the “likening” and not the original comparates *being likened*. Although the figure given above appears to be a synthetic representation, we do not have the synthetic representation of another thing in the sense of having produced a representation homogeneous with what we presume to be represented by the determinables. Rather, the determination is representative of what, for lack of a better term, we should call a “state of mind” – i.e., a “sensation” given by the “likening” of the determinable comparates. *This is not yet the representation of an object.* We may think of the determination as a *perception*, but not as an *objective* perception.

Third, while the determination is a representation of the type we earlier called an identification, *within* this representation we see a plurality of sub-representations – i.e., a

manifold *in* representation. This manifold even contains a *division* of the two circles that are meant to portray correspondence (not identity) with the comparates. Since we presume that the original comparates contained characteristics that could subsequently be aligned in Quality terms of agreement and opposition in the determination, this division is an analytic *re*-presentation of the correspondents. The act of comparison is not to be thought of in terms of some equivalence to analytic, synthetic, or anasynthetic *representation* as described in the previous section, even though our *representation of the act* includes these kinds of representations. Comparison is something altogether different and distinct from our three general classes of §4.1.

So from this we see that our “simple, even primitive” idea of comparison actually contains a great number of implications and related ideas upon closer examination. The significance we find in this idea is not limited merely to those characteristics and features we have just outlined. Equally important are the additional questions *implicit* in Figure 3.4.1. For example, we show two comparates in this figure; *why these particular two rather than two others?* The comparates must be *given* to this “agent of Comparison” (as Hegel put it); what decides what is to be given? The answer to this question does not seem to be contained in the idea of comparison itself and, if not, then something else is *necessary for the possibility* of making a comparison.

Our idea of comparison presupposes the ability to “liken” representations to one another. This immediately raises the question: *liken in what way?* Are there many possible ways to “liken” representations (as it would seem at this point) or is there some one unifying “substratum” that provides a general notion of what it is “to liken” (as it also would seem at this point)? “To liken” is another of those ideas which, at first glance, seems obvious and primitive but which, on closer scrutiny, is revealed to contain some difficult questions.

Closely related to this second question is a third: *by what standards or criteria or norms are things compared to be called “alike” or “not alike”?* The ability to compare implies the ability to *decide*. Does “alike” mean *equal* (and if so, by what measure of equality?) or does it mean “alike in sufficient degree” (and if so, what determines what is “sufficient”?), or does it mean either, or both, or more besides these?

Experience teaches us that we do in fact possess the power to compare and decide. Once this fact is conceded, we are bound to try to establish answers to the questions posed above because these questions relate to general and *a priori* powers *necessary for the possibility* of that power we already know to be an actual – not merely hypothetical – capacity of mind. It will not do to simply guess at (or worse, dictate by rational fiat) the answers to these issues. The knowledge we need to settle these issues is not yet in our grasp, and we will have to cover many more things in this treatise before we have it within our reach. Finally, what is the significance of Kant’s word, *Comparison*, for this process? Why did he use this rather than the usual word, *Vergleichung*? Is there more than one type of comparison? We will soon see the answer to this is: Yes.

## Reflexion

Kant's description of reflexion<sup>1</sup> given in his *Logik* [KANT8] is concise to the point of almost being uninformative. Fortunately, he provided a better description of this act in *Critique of Pure Reason*:

Reflexion does not have to do with objects themselves, in order to acquire concepts directly from them, but is rather the state of mind in which we first prepare ourselves to find out the subjective conditions under which we can arrive at concepts. It is the consciousness of the relationship<sup>2</sup> of given representations to our various sources of knowledge, through which alone their relationship among themselves can be correctly determined. The first question prior to all further treatment of our representations is this: In which cognitive ability do they belong together? Is it understanding or is it the senses before which they are connected or likened? . . . [All] judgments, indeed all comparisons [*Vergleichung*], require a reflexion, i.e., a distinction of the cognitive power to which the given concepts belong. The action through which I make the comparison [*Vergleichung*] of representations in general with the cognitive power in which they are situated, and through which I distinguish whether they are to be likened to one another as belonging to pure understanding or to sensual intuition, I call *transcendental reflexion*. . . The correct determination of this relationship depends on the cognitive power in which they *subjectively* belong to each other, whether in sensibility or understanding. For the difference in the latter makes a great difference in the way in which one ought to think of the former [KANT1a: 366-367 (B: 316-317)].

There is a tremendous difference, in terms of practical significance and otherwise, between a representation that comes to us via the corporeal senses and a representation that arises as a product of thinking alone. It is one thing to imagine the figurative skeleton in the closet; it is quite another to open the closet door and actually see a skeleton. It is one thing to see snow falling in winter and another to imagine in the autumn that snow will fall in a few weeks. In the first case I might consequently dress warmly; in the second, I might go buy a snow shovel.

The act of reflexion in determining the *transcendental place* of a representation (i.e., its "place" in terms of "originating in" either receptivity or understanding) affects the manner and mode in which the making of representations is carried out and how the "placed" representation enters in to this process [KANT1a: 371 (B: 324)]. The act of *Comparison*, Kant tells us, is merely "logical reflexion." It makes abstraction of all material *meaning* and concerns only formal rules for making comparisons among representations. Transcendental reflexion, on the other hand, is concerned with the material *origins* of representations, and it is in this context that we must view Kant's "act of reflexion." Reflexion determines the rules of comparison by providing

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<sup>1</sup> Kant sometimes used the Latin *Reflexion* as a synonym for the German *Überlegung* (consideration, deliberation), and I adopt the English spelling "reflexion" in this treatise as a convenient way of drawing a distinction between this idea and the idea of "reflective judgment" (which will come up later and will carry a quite different connotation).

<sup>2</sup> *Verhältnisse*. This can also be rendered as "relation" but we reserve that word for the form of the form of representation for which Kant used the non-German word "*Relation*". In the context of the present quote, "relationship" has the connotation of "the situation with respect to."



the link between the representations and the mental abilities that produce and process them. This is what Kant meant when he said reflexion determines how representations “can be comprehended in one state of consciousness” [KANT8: 100 (9: 94)].

### Abstraction

Abstraction – the “segregation of everything else by which given representations differ” – brings the three-fold synthesis of making a representation to its conclusion. It was pointed out earlier that the determination of comparison in Figure 3.4.1 is not yet the representation of an object. Reflexion likewise does not produce the “outcome” of a finished representation, but merely brings material congruence into the formal act of *Comparison*. (*Comparison* + reflexion give us general comparison = *Vergleichung*). Whether the outcome of representing is produced as an analytic representation, a synthetic representation, or an anasynthetic re-presentation, we must take the determination of Figure 3.4.1 through one more step to remove the “clutter” brought in with the comparates and reduce the final representation to its final form and contents.

But why should we think this final step is one of “abstraction”? In so stating, are we not making a presumption about the nature of representing – i.e., that representing is preferentially biased in favor of “likeness” and against “unlikeness”? Let us allow Kant to elaborate a bit on what he means by “abstraction.”

The expression *abstraction* is not always used correctly in logic. We must not say: to abstract *something* (*abstrahere aliquid*), but to abstract *from something* (*abstrahere ab aliquo*). If, for example, by scarlet cloth I think only the red color, then I abstract from the cloth; if I further abstract from the scarlet, and think it as material stuff generally, then I abstract from still more determinations, and my concept has thereby become even more abstract. For the more numerous the differences of things omitted from a concept or the greater the number of determinations from which abstraction has been made, the more abstract is the concept. Abstract concepts should therefore properly be called *abstracting* (*conceptus abstrahentes*), that is, concepts in which several abstractions occur. . .

Abstraction is only the *negative* condition under which generally valid representations may be generated; the *positive* is comparison [*Comparison*] and reflexion. For by abstraction no concept comes into being; abstraction only completes and encloses the concept within its definite limits [KANT8: 100-101 (9: 95)].

Every concept can be used *generally* and *particularly* (*in abstracto* and *in concreto*). The lower concept will be used *in abstracto* in consideration of its higher, the higher concept *in concreto* in consideration of its lower.

Note 1: The expressions of the abstract and concrete thus refer not so much to the concepts in themselves - for every concept is an abstract concept - as rather only to their use. And this use again can have varying degrees, according as one treats a concept now more, now less abstract or concrete, that is, either omits or adds now more, now fewer determinations. Through abstract use a concept comes nearer to the highest genus; through concrete use, however, nearer to the individual.

Note 2: Which use of concepts, the abstract or the concrete, is to be given preference over the other? On this nothing can be decided. The worth of the one is not to be valued less than the worth of the other. By very abstract concepts we recognize *little* in *many* things, by very concrete concepts *much* in *few* things; what we therefore gain on the one side, we lose on the other. A concept that has a large sphere is very useful in so far as one can apply it to many things; but on account of this there is the less contained *in* it. In the concept *substance*, for example, I do not think as much as in the concept *chalk*. [KANT8: 105-106 (9: 99-100)].

Universal rules are either *analytically* or *synthetically* universal. The former abstracts from differences; the latter attend to the differences and consequently determine with regard to them, too. The simpler an Object is thought, the more possible is analytic universality according to a concept [KANT8: 108 (9: 102-103)].

There is a great deal more in this idea of “abstraction” than Kant’s brief description of it as “segregation of everything else by which given representations differ” seems to imply. The “segregation” involved in abstraction does not have to do *immediately* with “likeness” and “unlikeness” *in the represented comparates*; it has to do with “likeness” and “unlikeness” between the determination of Figure 3.4.1 and *the purpose for which the representation is being made*. Representing is, above all else, a mental *action*, and actions are never taken *without some reason or ground*. An objective representation does not contain its own reason within itself, for that would imply a purpose *in the correlate object* of the representation that could be somehow *given in* the manner by which this object affects mind – an idea we must reject if we are to accept Kant’s Copernican hypothesis. The reason for an object being represented must be supplied otherwise – i.e., by the phenomenon of mind.

We recall that reflexion is a determination of the “situation” of representations with respect to the mental abilities of representing. The power to represent a *purpose* – which, if it is to be an *a priori* power of *nous*, must represent this purpose *non-objectively*, i.e., *subjectively* – must be one of these abilities because the power to represent a purpose is necessary for the possibility of *any* action being taken *on purpose*. This further implies that a representation of a purpose must be involved with the comparates in the process of Kant’s *Verstandes - Actus*.

Only mediately to this subjective determination of “likeness” and “unlikeness” *with respect to purpose* can an *expedient* likeness or unlikeness<sup>3</sup> be attributed to *objective* characteristics of the comparates contained in the determination of Figure 3.4.1. It is on this point that characteristics which “differ” – i.e., which do not “suit the purpose” – may be “segregated” from the outcome of the representing action.

If this was not the case, and if it was so that “abstraction” were to be interpreted literally from our first and earliest description of this part of Kant’s *Verstandes - Actus*, we could think no anasynthetic classes in representation. Every act of representing would produce successively

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<sup>3</sup> We will later see that expedience in representation is the fundamental acroam of reflective judgment.

more fragmented representations, but the ability to think a genus from various species in a hierarchy of types of representations would be impossible. Both a carp and a trout could have fins and live in the water, but we could know no such thing as “fish.”

## § 5. Cognitions

In discussing the three types of representations and their making in the previous section, we have so far confined ourselves to a more or less logical description of their form. The analytic, synthetic, and anasynthetic classes of representation merely describe the different possible ways we can transform one or more given representations into different representations so far as the logical forms of “incomes” and “outcomes” are concerned. Comparison, reflexion, and abstraction similarly describe the form that this process of transformation takes – i.e., the form of the act of representing. The objective validity of the idea of comparison is established by the fact that we are able to differentiate among different representations – which would not be possible if we could not make comparisons. The idea of reflexion obtains its objective validity from the fact that we can and do distinguish the sources of our representations as originating from physical senses or from discursive thought. Finally, the idea of abstraction gets its objective validity from the fact that we can and do organize our representations hierarchically – e.g., genus and species – and that we in fact do so in accordance with our own purposes.

Yet this formal description of representations and representing raises additional questions and issues. The descriptions given in the previous section must necessarily presuppose certain other ideas and we must now examine the implications of these ideas. In particular, we must examine what these implications tell us about the Nature of the phenomenon of mind concerning the transcendental grounds<sup>4</sup> for the making of representations.

We say that representing is a mental action. Such an action can be viewed as something that produces a change in the “state of mind” of the thinking Subject. This idea of a “state of mind” is still, at this point, a vague concept to which we need to bring more clarity. Until now we have looked at representing from the viewpoint of how representing affects representations; let us now shift our focus and look at representing in terms of its implications for this idea of a “state of mind.”

In making this examination we must not lose sight of the fact that we are still in the very early stages of our theorizing on the topic of the phenomenon of mind. Therefore, we must guard

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<sup>4</sup> Recall that “transcendental” refers to the *a priori* knowledge necessary for the possibility of something we know factually takes place. The word “transcendent,” on the other hand, refers to something that goes beyond what we can know with objective validity. Thus, these two terms are entirely opposed to each other in the Critical Philosophy.

against going too far too fast in drawing conclusions based upon what we know so far. We are still in the neighborhood of “what is clearer to us” rather than “what is clearer by nature” of the phenomenon of mind. Accordingly, let us fix our attention on that part of the “nature of representation” that is clearest to us – namely those representations that are **objective** (i.e., representations of objects in “the world”). Representations of this sort – which we call **cognitions** – provide us with the clearest examples of representation and representing. From such examples we can most easily gain some insights into this idea of a “state of mind.”

### § 5.1 The Object of Cognition

The word “object” is widely used in philosophy and in psychology as almost synonymous with the word “thing.” The meaning of this word, like our other fundamental terms, seems at first glance to be obvious but, upon closer examination, we find once again that certain difficulties and prejudices attach themselves to the idea. In our present context here, we apply the term “object” to mean *the real correlate* of the objective representation (cognition) that represents it. If, therefore, we misconstrue what we take to be the object, we inevitably misconstrue the Nature of its mental representation. So we must ask: what *is* an object of cognition?

To the normal adult mind, this question seems trivial. A chair, a sunrise, a cool breeze – all these are taken as examples of real objects (things) of the external world. If we adopt this attitude of uncritical realism it is only a short and natural step for us to suppose that our cognitions are more or less one-for-one images of these things. This supposition is often called the “copy of reality hypothesis” of cognition, **and it is wrong**. The supposition we have a copy-of-reality mechanism inherent in our human Nature is provably contrary to the facts, as we will now see.

#### The Copy of Reality Hypothesis

The copy of reality hypothesis has been an assumption that underlies a great part of the doctrine of empiricism. We find this assumption at the heart of Locke’s “simple idea” and Hume’s “simple impression.” Associationism – the doctrine which holds that the mind contains certain laws of connection between ideas whereby one idea leads to another – draws upon the presupposition of the existence of such simple ideas or impressions.

It is evident that there is a principle of connexion between the different thoughts or ideas of the mind, and that, in their appearance to the memory or imagination, they introduce each other with a certain degree of method and regularity. . .

To me, there appear to be only three principles of connexion among ideas, namely, *Resemblance*, *Contiguity* in time or place, and *Cause* or *Effect* [HUME2: 457].

The copy of reality hypothesis and the doctrine of associationism are both very old theories. We find our first mention of associationism in the writings of Plato [PLAT6: 55-59 (72e-76a)] and of Aristotle:

Whenever, therefore, we are recollecting, we are experiencing one of the antecedent movements until finally we experience the one after which customarily comes that which we seek. This explains why we hunt up the series, having started in thought from the present or some other, and from something either similar, or contrary, to what we seek, or else from that which is contiguous with it. That is how recollection takes place; for the movements involved in these starting-points are in some cases identical, in others, again, simultaneous, while in others they comprise a portion of them, so that the remnant which one experienced after that portion is comparatively small.

Thus, then, it is that persons seek to recollect, and thus, too, it is that they recollect even without seeking to do so, viz., when the movement has supervened on some other. For, as a rule, it is when antecedent movements of the classes here described have first been excited, that the particular movement implied in recollection follows. We need not examine a series of which the beginning and end lie far apart, in order to see how we remember; one in which they lie near one another will serve equally well. For it is clear that the method is in each case the same. For by the effect of custom the movements tend to succeed one another in a certain order. Accordingly, therefore, when one wishes to recollect, that is what he will do: he will try to obtain a beginning of movement whose sequel shall be the movement he desires to reawaken. This explains why attempts at recollection succeed soonest and best when they start from a beginning. For, in order of succession, the movements are to one another as the objects [ARIS13: 717 (451<sup>b</sup>18-32)].

It is also to Aristotle that we may credit one of the earliest statements of the copy of reality hypothesis of perception.

There are two distinctive peculiarities by reference to which we characterize the soul - (1) local movement and (2) thinking, understanding, and perceiving. Thinking and understanding are regarded as akin to a form of perceiving; for in the one as well as the other the soul discriminates and is cognizant of something which is. [ARIS9: 679 (427<sup>a</sup>18-21)].

Generally, about all perception, we can say that a sense is what has the power of receiving into itself the sensible forms of things without the matter, in the way in which a piece of wax takes on the impress of a signet-ring without the iron or gold; what produces the impression is a signet of bronze or gold, but not *qua*<sup>1</sup> bronze or gold: in a similar way the sense is affected by what is colored or flavored or sounding not insofar as each is what it is, but insofar as it is of such and such a sort and according to its form. A primary sense-organ is that in which such a power is seated. The sense and its organ are the same in fact, but their essence is not the same [ARIS9: 674 (424<sup>a</sup>18-25)].

In Aristotle's time, of course, our present-day knowledge of the physiological details of neuroscience did not yet exist and so it is easy to see how one could think that the "form" of an object could be "impressed" upon the senses "without the matter" of the object, especially when we remember that to Aristotle "form" meant "being in actuality." Aristotle identified five "special senses" (sight, hearing, smell, taste, touch) by which *all* perception was supposed to take place.

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<sup>1</sup> The word *qua* translates roughly as "insofar as they are."

In dealing with each of the senses we shall first have to speak of the objects which are perceptible by each. The term 'object of sense' covers three kinds of objects, two kinds of which we call perceptible in themselves, while the remaining one is only incidentally perceptible. Of the first two kinds one consists of what is special to a single sense, the other of what is common to any and all of the senses. I call by the name of special object of this or that sense that which cannot be perceived by any other sense than that one and in respect of which no error is possible; in this sense color is the special object of sight, sound of hearing, flavor of taste. Touch, indeed, discriminates more than one set of different qualities. Each sense has one kind of object which it discerns, and never errs in reporting that what is before it is color or sound (though it may err as to what it is that is colored or where that is, or what it is that is sounding or where that is). Such objects are what we call the special objects of this or that sense.<sup>2</sup>

Common sensibles are movement, rest, number, figure, magnitude; these are not special to any one sense, but are common to all. There are at any rate certain kinds of movement which are perceptible both by touch and by sight.

We speak of an incidental object of sense where e.g. the white object which we see is the son of Diaries; here because being the son of Diaries is incidental to the white which is perceived, we speak of the son of Diaries as being incidentally perceived. That is why it in no way as such affects the senses. Of the things perceptible in themselves, the special objects are properly called perceptible and it is to them that in the nature of things the structure of each several sense is adapted [ARIS9: 665 (418<sup>a</sup>7-25)].

Although with Locke, Hume, and others coming down to the present day many of the “how” details of Aristotle’s theory have been altered by either philosophy or by science, Aristotle’s fundamental premise – the copy of reality hypothesis – has proven to be remarkably rugged and enduring. We can hear the echoes of Aristotle’s voice in the vocabulary of neuroscience and its nomenclature describing brain anatomy in terms of sensory cortices and association cortices. But, for all the apparent self-evidence of the copy of reality hypothesis, we must keep in mind that this view is, after all, an idea of the mature adult mind that comes to us directly from the uncritical realism we all experienced as children.

If the copy of reality hypothesis is correct then it has *implications of fact* that can be subjected to scientific testing. In particular, if this hypothesis is a true description of the nature of our cognitions then very young children should perceive the world in these objective terms. Even newborn infants should therefore be capable of distinguishing individual objects and of separating these objects by localizing them in space. Whether or not this capability is actually possessed by the infant is a question of *fact* and, as such, may be experimentally tested. And when this testing is carried out, we find that no such capability is possessed by the infant at the beginning of life.

### The Construction of Reality by the Infant

Jean Piaget devoted a lifetime to the study of the origin, development, and nature of intelligence in children. Of chief interest to us at this juncture is his finding that the way in which everyday “reality” appears to us in our later years is the product of an active and on-going process of

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<sup>2</sup> Aristotle was unaware of the phenomenon of synesthesia, e.g. ‘hearing colors’ or ‘tasting shapes.’

mental construction, and that this construction involves, at its deepest levels, a process of assimilation and accommodation in which the traditional five senses are coupled with our own activities in producing our perceptions and interpretations of “reality data.” At the beginning of life, he finds the sensori-motor activities of the infant thoroughly mixed in with the data of the traditional “five senses” to such a degree as to be unseparated in the baby’s earliest cognitions.<sup>3</sup>

In general it may be said that during the first months of life, as long as assimilation remains centered on the organic activity of the subject, the universe presents neither permanent objects, nor objective space, nor time interconnecting events as such, nor causality external to the personal actions. If the child really knew himself, we should have to maintain that solipsism exists. At the very least we may designate as radical egocentrism this phenomenalism without self-perception, for the moving pictures perceived by the subject are known to him only in relation to his elementary activity [PIAG2: xii-xiii].

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 the object as such. . . 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 [PIAG2: 88].

Piaget’s work reveals that our most fundamental powers of perception, far from following the copy of reality hypothesis, actually involve a complex and *active* process of spontaneous, global, and entirely *practical* sensori-motor activities. It is from these activities that the child “schematizes” (i.e., constructs) his knowledge of reality.

The system of sensori-motor schemes of assimilation culminates in a kind of logic of action involving the establishment of relations and correspondences (functions) and classification of schemes (cf. the logic of classes); in short, structures of ordering and assembling that constitute a substructure for the future operations of thought. . . It organizes reality by constructing the broad categories of action which are the schemes of the permanent object, space, time, and causality, substructures of the notions that will later correspond to them. None of these categories is given at the outset, and the child’s initial universe is entirely centered on his own body and action in an egocentrism as total as it is unconscious (for lack of consciousness of the self) [PIAG15: 13].

Piaget provides us with a wealth of detail in describing this process of organizing activity. The implications for what all of this holds for our broad question of what is the object of cognition was eloquently stated some years before Piaget by William James.

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<sup>3</sup> Piaget uses the term “cognition” in a somewhat different sense than is employed in this treatise. In his usage of this and similar terms, Piaget usually prefers to reserve such designations for denoting “higher” intellectual accomplishments. I do not follow him in this choice of terminology because it would mean, in this treatise, that we would have to produce a new and more difficult to understand set of words for describing different kinds of representations. In quoting Piaget, I will leave his terminology intact, but the reader should be aware that outside of these quotations, I shall revert to my own (or, rather, Kant’s) terminology. We shall have to suffer the possibility of incurring some minor confusion in order to avoid the near-certainty of major confusion elsewhere.

In popular parlance, the word object is commonly taken without reference to the act of knowledge, and treated as synonymous with individual subject of existence. Thus if anyone ask what is the mind's object when you say "Columbus discovered America in 1492," most people will reply "Columbus" or "America," or, at most, "the discovery of America." They will name a substantive kernel or nucleus of the consciousness, and say the thought is "about" that - as indeed it is - and they will call that your thought's "object." Really that is usually only the grammatical object, or more likely the grammatical subject, of your sentence. It is at most your "fractional object"; or you may call it the "topic" of your thought, or the "subject of your discourse." But the *Object* of your thought is really its entire content or deliverance, neither more nor less. It is a vicious use of speech to take out a substantive kernel from its content and call that its object; and it is an equally vicious use of speech to add a substantive kernel not articulately included in its content, and to call that its object. . . . The object of my thought in the previous sentence, for example . . . is nothing short of the entire sentence, "Columbus-discovered-America-in-1492."

The object of every thought, then, is neither more nor less than all that the thought thinks, exactly as the thought thinks it, however complicated the matter, and however symbolic the manner of thinking may be [JAME2: 178-179].

In the work of both James and Piaget, we find "the" object of cognition presented to the mind as an internally complex but representationally *singular* thing that bears little resemblance to a chair, a sunrise, a cool breeze, or any of the other common "objects" of adult life. *Details* are certainly represented *within* this singular cognition, but insofar as the object is concerned there is no "differentiation of quantity" in its representation.

This does not mean that this detail is inaccessible. Quite the opposite. However, and this is the main point, "the" direct object of sensible perception does not at all correspond to the individual "objects" of which we are accustomed to speaking. The individualization of what James called a "substantive kernel" comes later, and the act that differentiates and objectifies these details we shall call *thinking*. As for the direct object itself, we can hardly do much better in summarizing the description given above than to follow Kant and call this direct object an *appearance*.<sup>4</sup>

### The Objectification of Detail

We have thus far only spoken of the object of direct sensible perception. Now we must consider another sort of object, namely the object of cognitions that arise from *thinking* rather than direct sense perception. While we have just seen that an appearance defies the copy of reality hypothesis, might not a representation of objects compatible with this hypothesis be implicit *within* the representation of an appearance? The answer to this question is no. Let us see why.

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<sup>4</sup> In using the word "appearance" to describe the direct object of perception, we have no intention of implying that this appearance is exclusively "visual" or even that an appearance is restricted to any of the "five senses." Piaget's term, "picture," is hardly better in this regard, although his term "perceptual cluster" strikes closer to being unambiguous. However, even this term will not do full justice to our theory, and so it is that I have chosen to stick with Kant's term.



The act of objectifying the detail contained “within” the cognition of an appearance necessarily presupposes the act of making an analytic representation from this initial cognition and the act of making a synthetic representation of the new object. Like the representation of an appearance, the objectification of detail is, consequently, an inherently *active* process.

The truth is that Experience is trained by *both* association and dissociation, and that psychology must be writ *both* in synthetic and analytic terms. Our original sensible totals are, on the one hand, subdivided by discriminative attention, and, on the other, united with other totals - either through the agency of our own movements, carrying our senses from one part of space to another, or because new objects come successively and replace those by which we were at first impressed. The "simple impression" of Hume, the "simple idea" of Locke are both abstractions, never realized in experience. Experience, from the very first, presents us with concreted objects, vaguely continuous with the rest of the world which envelops them in space and time, and potentially divisible into inward elements and parts. These objects we must break asunder and reunite.

Where the parts of an object have already been discerned, and each made the object of a special discriminative act, we can with difficulty feel the object again in its pristine unity; and so prominent may our consciousness of its composition be, that we may hardly believe that it ever could have appeared undivided. But this is an erroneous view, the undeniable fact being that *any number of impressions, from any number of sensory sources, falling simultaneously on a mind WHICH HAS NOT YET EXPERIENCED THEM SEPARATELY, will fuse into a single undivided object for that mind.* The law is that all things fuse that *can* fuse, and nothing separates except what must. . . The baby, assailed by eyes, ears, nose, skin, and entrails at once, feels it all as one great blooming, buzzing confusion; and to the very end of life, our location of all things in one space is due to the fact that the original extents or bignesses of all the sensations which came to our notice at once, coalesced together into one and the same space. There is no other reason than this why "the hand I touch and see coincides spatially with the hand I immediately feel" [JAME2: 317-318].

If the copy of reality hypothesis held “within” the representation of an appearance we should expect that the child could quickly move to an awareness of individual common objects located in space relatively to other common objects. In actual fact the baby requires a long time to develop the representation of individual permanent objects. Piaget has identified six stages of development during the first two years of life, over which time the infant evolves from his initial state of radical egocentrism to the consciousness of himself as an object among objects in the world. The representation of permanent objects, as individual things, only begins sometime between four and eight months of age, in the third stage of sensorimotor intelligence.

The behavior patterns of the third stage are those which are observable between the beginnings of prehension of things seen and the beginnings of active search for vanished objects. Hence they are still earlier than object concept but mark progress in the solidification of the universe depending on action.

Between three and six months of age, as we have seen elsewhere [PIAG1, Chap. II, §4], the child begins to grasp what he sees, to bring before his eyes the objects he touches, in short to coordinate his visual universe with the tactile universe. But not until the age of 9 or 10 months does active search for vanished objects occur in the form of the use of grasping to remove solid objects that may mask or cover the desired object. This intermediate period constitutes our third stage.

But, if this long lapse of time is necessary for the transition from prehension of an object at hand to true search for a missing object, it is because the interim is filled with the acquisition of a series of intermediate behavior patterns all of which are necessary to proceed from the mere perceived image to the concept of permanent object. In this connection we can distinguish these five types of behavior: 1) "visual accommodation to rapid movements"; 2) "interrupted prehension"; 3) "deferred circular reaction"; 4) the "reconstruction of an invisible whole from a visible fraction"; and 5) the "removal of obstacles preventing perception." The first of these behavior patterns merely extends those of the second stage, and the fifth fulfills those of the fourth stage.

Visual accommodation to rapid movements makes possible the anticipation of future positions of the object and consequently endows it with a certain permanence. This permanence of course remains related to the act of accommodation itself, and thus the behavior patterns merely extend those of the second stage; but there is progress in the sense that the anticipated position of the object is a new position and not one observed a moment earlier to which the eyes merely return [PIAG2: 13-14].

Piaget goes on to record seven specific observations of infants made during his research which illustrate the behaviors of which he speaks. Summarizing these observations, he writes

However commonplace these facts may be they are important in forming object concept. They show us that the beginnings of permanence attributed to images perceived arise from the child's action in movements of accommodation. In this respect the present behavior patterns merely extend those of the second stage but reveal essential progress: the child no longer seeks the object only where he has recently seen it but hunts for it in a new place. He anticipates the perception of successive positions of the moving object and in a sense makes allowance for its displacements. But precisely because this beginning of permanence is only an extension of the action in progress, it could only be very limited. The child cannot conceive of just any displacements or just any objective permanence. He is limited to pursuing, more or less correctly, with his eyes or with his hand the trajectory delineated by the movements of accommodation peculiar to the immediately preceding perception; and it is only in the measure in which, in the absence of the objects, he continues the process begun in their presence that he is able to endow them with a certain permanence. . .

It therefore seems clear that the displacement attributed to the object depends essentially on the child's action (movements of accommodation which are extended by looking) and that permanence itself remains related to that very action.

As far as the first point is concerned, it would be impossible to give to the child the concept of autonomous displacements. . . everything takes place as if the child, when witnessing the falling movement from the start, is not aware that he moves himself about, in order to follow the movement, and consequently is not aware that his body and the moving object are located in the same space; if the object is not found within the exact extension of the movement of accommodation, the child will give up hope of finding it again. Thereafter, in his consciousness, the object's movement is one with the kinesthetic or sensorimotor impressions which accompany his own movements of eyes, head, or torso; when he loses sight of the moving object the only procedures suitable for finding it again therefore consist either in extending movements which have already been delineated or in returning to the point of departure. Nothing forces the child to consider the object as having been displaced in itself and independently of its movement; all that he is given is an immediate connection between his kinesthetic impressions and the reappearance of the object in his visual field, in short a connection between a certain effort and a certain result. There does not yet exist what we shall later call . . . an objective displacement.

Then regarding the second point, that is to say the permanence attributed to the object as such, it is self-evident that this permanence remains related to the subject's action. In other words, the visual images the child pursues acquire in his eyes a certain solidity to the precise extent that he tries to follow them, but they do not yet constitute substantial objects. The mere fact that the child does not imagine their displacement as being independent movement and that he often searches for them . . .

at the very point where they made their departure, reveals that for him, these images still remain at the disposal of the action itself, and in certain absolute situations. True, that is a beginning of permanence, but such permanence remains subjective; it must produce in the child an impression comparable to that which he experienced in discovering he could suck his thumb when he wished, see things move when he moved his head, hear a sound when he rubbed a toy against his bassinet or pulled the strings attached to the rattle hanging from its hood, etc. . . [The] object still exists only in connection with the action itself [PIAG2: 18-20].

These observations illustrate that by the third sensorimotor stage the child is beginning to develop more refined representations but that these representations do not yet reach the level of representing what we, as adults, view as the common objects of everyday experience. Rather, the representations at this stage might better be described as “perceptual clusters” which, while individuating particular details, remain thoroughly *practical* and rooted in kinaesthetic perceptions.

By the time the child comes to perceiving objects with more or less the same realism that we do as adults, a tremendous amount of representative structure has already been introduced into the child’s representational manifold of cognitions. It is not the form “of” the object that has been “impressed” on the child’s perceptions; it is the form *given to the representation by the child’s sensorimotor actions* in learning to perceive the object. True enough, we can accept that some particular elements of sensation delivered through the “five senses” probably remain more or less constant during this long process and are assimilated into the developing cognitions. But if so they constitute only a part of the representation, and this part is far from being the *defining factor* of the cognition. To hold it as such, as the copy of reality hypothesis demands, is nothing else than intellectual “adultomorphism” (to use Piaget’s term) – attributing to the infant the psychic outlook of an adult.

From these facts we are driven to reconsider what we mean when we refer to the “object of representation.” If the transcendental connection between representation and what is represented is to have continuity – that is, if we are not to introduce a *hiatus* between our theory of *nous* and the environment of the organized being – the object of immediate sensible representation must be regarded as an *appearance* and not as a *Ding an sich*, such as a chair-in-itself, etc., nor as a thing that makes a wax tablet ‘impression’ upon ‘the senses.’ The appearance is the “what is referred to” by the sensible representation and is not, in and of itself, that which we call the thing.

## § 5.2 Intuitions and Concepts

We now turn from the object of sensible representation to the representation itself. We may call any conscious representation a **perception**. Under this general title, those perceptions that are perceptions of objects we call cognitions. From what we have said above, we can identify two parts in cognition: **intuitions** and **concepts**.

## Intuition

We will call the direct sensible perception of an appearance an **intuition**. In non-technical language this word (from the Latin *intueri*, to look on) is defined in the dictionary as “the immediate knowing or learning of something without the conscious use of reasoning.” This definition does accord quite well with the perception of an appearance described in the previous section. An intuition stands in immediate relation to its object (the appearance) as a singular representation of the entire complex of sensations – both those of the “five outer senses” and those Piaget has called kinesthetic sensations – presented by the Organized Being to itself.

An intuition is an undivided whole of representation. In this representation we see James’ undifferentiated “thought,”<sup>1</sup> e.g. “the-pack-of-cards-is-on-the-table,” prior to the discrimination of the individual “terms” contained therein. There is indeed a manifold of representations “contained in” an intuition, but this manifold is not individuated into details within the intuitive perception. We can further note that an intuition is the outcome of a complex sensorimotor process which compiles the “data of the senses” into this whole of representation and gives it *form*. **Sensation** – that is, a perception which refers solely to the thinking Subject as a modification of its state [KANT1a: 398 (B: 320)] – provides the matter of intuition. The form of intuition, however, is given to it by the Subject’s own mental activities – a conclusion we are driven to by our rejection of the copy of reality hypothesis.

Now, it is clear that the representing of the form of an intuition necessarily antecedes the perception of an object of appearance. The “know-how” to carry out the formation of sense data into an empirical intuition can therefore be viewed as a kind of knowledge and, since this “know-how” must exist in the mental powers of the Subject prior to any specific empirical representation, this “know-how” must be called **knowledge a priori**. Furthermore, this “know-how” must stand independently of *any* empirical experience because experience itself is not possible unless it is first possible to gather together the manifold of sensations into an objective representation. Kant called knowledge that was independent of empirical experience **pure knowledge**; thus, the “know-how” of representing the form of an intuition may be justly termed **pure intuition**. Pure intuition *gives form* to the matter of sensation to produce an empirical intuition.

I call that in the appearance which corresponds to sensation its matter, but that which allows the manifold of appearance to be intuited as ordered in certain relationships<sup>2</sup> I call the form of

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<sup>1</sup> Recall that James used the word “thought” in a vague and general way. This is in contrast to the Kantian terminology employed here in which we reserve the term “thinking” to describe further mental actions carried out on the intuitive representation.

<sup>2</sup> *Verhältnissen*. See footnote 2, pg. 183.

appearance. Since that within which the sensations can alone be ordered and placed in a certain form cannot itself be in turn sensation, the matter of all appearance is only given to us *a posteriori*, but its form must lie ready for it in the mind *a priori*, and can therefore be considered separately from all sensation [KANT1a: 155-156 (B: 34)].

### The Idea of "Concepts"

We now turn to our second part of cognition. That we are able to objectify details within perceptions and form representations of more abstract objects is self-evident. This ability in itself points to, as James put it, the "breaking asunder and reuniting" of representations. Furthermore, this ability is made manifest, albeit in primitive form, very early in life. Piaget has noted the ability to differentiate details within what we here call an intuition in the observation of the sucking reflex of very young infants.

The sucking reflex can be conceived as a global scheme of coordinated movements which, if it is accompanied by awareness, certainly does not give rise to the perception of objects or even of definite sensorial pictures but simply to an awareness of attitudes with at most some sensorimotor integration connected with the sensibility of the lips and mouth. Now this scheme, due to the fact that it lends itself to repetitions and to cumulative use, is not limited to functioning under compulsion by a fixed excitant, external or internal, but functions in a way for itself. In other words, the child does not only suck in order to eat but also to elude hunger, to prolong the excitement of the meal, etc., and lastly, he sucks for the sake of sucking. It is in this sense that the object incorporated into the sucking scheme is actually assimilated to the activity of this scheme. The object sucked is to be conceived, not as nourishment for the organism in general, but, so to speak, as aliment for the very activity of sucking, according to its various forms. . .

But apart from this generalizing assimilation, another assimilation must be noted from the first two weeks of life, which we can call "recognitory assimilation." This second form seems inconsistent with the preceding one; actually it only reveals progress over the other, however slight. What we have just said regarding the lack of differentiation which characterizes generalizing assimilation is, in effect, true only with respect to states of slight hunger or satiety. But it is enough that the child be very hungry for him to try to eat and thus to distinguish the nipple from the rest. . . Ever since the third day (Obs. 3), Laurent seems to distinguish the nipple from the surrounding teguments; he tries to nurse and not merely to suck. From the tenth day (Obs. 4), we observe the alacrity with which he rejects the eider-down quilt or the coverlet which he began to suck, in order to search for something more substantial. Furthermore, his reaction to his father's index finger (Obs. 6) could not be more definite: disappointment and crying. Lastly, the gropings on the breast itself (Obs. 5 and 8) also reveal selectivity. . .

Of course there could be no question, either here or in connection with generalizing assimilation, of the recognition of an "object" for the obvious reason that there is nothing in the states of consciousness of a newborn child which could enable him to contrast an external universe with an internal universe. . . Neither could there be a question of purely perceptive recognition or recognition of sensorial images presented by an external world, although such recognition considerably precedes the elaboration of objects (recognizing a person, a toy or a linen cloth simply on "presentation" and before having a permanent concept of it). If, to the observer, the breast which the nursling is about to take is external to the child and constitutes an image separate from him, to the newborn child, on the contrary, there can only exist awareness of attitudes, of emotions, or sensations of hunger and of satisfaction. . . When the nursling differentiates between the nipple and the rest of the breast, fingers, or other objects, he does not recognize either an object or a sensorial picture but simply rediscovers a sensorimotor and particular postural complex . . . among several

analogous complexes which constitute his universe and reveal a total lack of differentiation between subject and object. [PIAG1: 35-37].

It is possible to try to interpret Piaget's remarks given above, and his reported observations given in [PIAG1] that support these remarks, as indicative only of the ability of the newborn to distinguish between one intuition (in its totality) and another intuition (also in its totality). Such an interpretation does not require any assumption of perception of specific individual details *within* either intuition but only the ability to globally compare and differentiate two complete intuitions. However, such an interpretation overlooks Piaget's other major finding, namely that *all* these analogous intuitions are assimilated into a single *global sensorimotor scheme*. It is not a question of the child's mind comparing one distinct intuition with another, for this model necessarily presumes that such individual intuitions are separately memorized as distinct "impressions." It presumes, in other words, merely a more sophisticated version of the copy of reality hypothesis.

That *something* must be "impressed on the mind" is obvious since if this is not the case then the phenomenon of *memory* is inexplicable. Indeed, we do possess biological findings that point to biochemical mechanisms for "imprinting" at least short-term "memory traces" [PIAG21: 24-26]. But this by no means implies that it is the representation of a full-blown intuition that is so "impressed." Indeed, the psychological evidence tends to refute this interpretation [PIAG21: 382-409], [PIAG15: 80-83]. Rather, experimental evidence points to a conclusion that the phenomenon of memory is, in fact, a complex process inextricably bound up with higher processes of "intelligence." We shall have to examine what this means more closely later on, but for now let it suffice to say that it is not the intuition itself that is "remembered"; rather, the recollection of an objective representation in the form of an intuition involves an act of mental *reconstruction* in which "higher" forms of intellectual representation play a role:

The last hypothesis, and the foregoing remarks persuade us that it is the correct one, is that there are indeed two forms of conservation, but that they are interdependent. There is, first of all, the conservation of schemes resulting from their generalizing function, and then there is the conservation of memories, i.e. the constant restoration of particular and past existences, each needing the support of the other, but with the first playing the leading rôle. That the conservation of memories rests on the conservation of schemes has, we hope, been proved exhaustively by everything we have said about mnemonic schematizations and their transformations . . . The converse of this proposition, namely, that the schemes of the intelligence have need of memory in general and of individualized memories in particular is equally obvious, not because the conservation of schemes rests on memory . . . but because the memory and the image supply the intelligence with useful 'representations,' in the mathematical sense of that term, i.e. with the particular and concrete models it needs in order to engage in constructive activities. . .

It follows that the memory in the strict sense is part of a general set of cognitive functions, of which the intelligence represents a higher and balanced form, and that the conservation of memories rests on special but related schematizations in certain cases, but participates directly in that of the intelligence in others [PIAG21: 390].

The assimilation of intuitions into intellectual structures (schemata) necessarily presupposes the breaking down of the manifold in intuition into other representations that stand only *mediately* (and not *immediately*) in relationship to the object being “remembered.” These mediate representations, the re-cognition of intuition into this less immediate form, we shall call **concepts**. The necessity of the idea of concepts stems from the following facts: 1) that we do in fact possess the ability to generalize from a collection of singular representations – i.e. intuitions – to other types of representations, including representations of expositions of objects that are supersensible; 2) that studies of memory in young children reveal the startling fact that children’s recollections of simple figures they have seen only once can actually improve over the course of seven or eight months [PIAG21: 50-61], [PIAG15: 82-83]; and, 3) that what a young child is able to remember and describe is dominated by the way in which the child understands what he or she has seen [PIAG15: 82-83]. In short, the preponderance of evidence we have at hand argues decisively against the copy of reality hypothesis as applied to an intuition, and this leaves only the possibility that the manifold in an intuition is, in fact, broken down and “re-cognized” in another form, namely that which we are calling the concept.

It is essential for us to clearly understand what it is we are attempting to describe with this idea of a “concept” and the context in which this idea is embedded. For the former the dictionary definition of the word “concept” is of little help:

**concept:** [L. *conceptus*, a collecting, gathering, a thought, from *concipere*, to take in, conceive; *con-*, and, *capere*, to take], an idea, especially a generalized idea of a class of objects; a thought; general notion.

In this definition the old Latin meaning comes closer to describing the role of a concept than does the English language description. In this treatise we introduce the term “concept” in order to explain this process of the “breaking asunder and reuniting” of the representation of an object. It is of primary importance we bear in mind that an object – that is, an *appearance* – is immediately represented only by an *intuition*. Thus, when James speaks of breaking asunder and reuniting an “object” we can take this only to refer to the breaking apart and re-synthesizing of representations of appearances. If we think of this process as one by which “objects come to be known,” this process must begin *and end* in intuition.

A concept must therefore be an intermediate representation. If objects are immediately represented only by intuitions, it follows that a concept is *never the representation of an object* as such. Its title to being called an objective perception stems only from the concept’s connection in relationship to intuitions. To whatever extent a concept may be “about something,” the *direct* object of a concept must be concerned with intuitions and not with appearances.

*Comment:* When we speak of an “object of intuition” and an “object of a concept” we are speaking about two entirely different kinds of objects. Because the term “object” has such a broad and general scope of application, it seems prudent at this point for us to introduce a convention that helps to make clear what object to which we refer in our discussions. In general the object of any given representation *X* refers to that which *X* is a representation *of*. We have called the object of an intuition by the name “appearance.” The ‘thing’ that the appearance is regarded as “the appearance of” (e.g., a chair, a sunrise, a cool breeze) we will call a **transcendental object**. The adjective “transcendental” used here denotes that the object is to be regarded in our theory as something apart from its appearance, and that its *Dasein* might possibly implicate characteristics and attributes that are supersensible and therefore un conveyed to one’s perception by means of the data of the senses. If we represent the object as including such characteristics or attributes, we call such a representation *speculative*.

Unless specifically noted otherwise, we will take the phrase “the object of *X*” to refer to the immediate (or direct) object of *X*, i.e. what *X* is “about” or “connected with.” Thus the object of an appearance is the transcendental object; the object of an intuition is an appearance. We must now address the question: what is the object of a concept? □

### The Sensible Nature of Appearances

Now let us take the next step in our exposition of what we mean by the term “concept” and what a concept represents. Earlier, in saying that a concept is never the representation of the transcendental object, we employed a hypothetical premise, namely: *objects are sensibly represented only as appearances*. Our first order of business is to justify this premise.

First, let us understand very clearly that no sensible object can ever be represented other than indirectly through the representation of its appearance. This is, after all, what we mean by the adjective “sensible” and is a consequence of our rejection of the copy of reality hypothesis. However, nothing we have said so far speaks to the representation of a “non-sensible” object, e.g., inertial mass, electric charge, eternity, an angel, virtue, or any other thing with which we never have a direct sensible encounter. Do we have any ground for holding that the representation of such an object *must* be only the representation of an appearance (and therefore an intuition)?

Whenever we think about a supersensible object, it seems to be the case that we always represent this object to ourselves through *sensible exhibition* of one kind or another.<sup>3</sup> This situation is reflected when we say of some idea *it makes sense*. Even such immaterial objects as

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<sup>3</sup> Bear in mind that we use the term “sense” in a broader context than the classic “five senses” of Aristotle. To do otherwise would be to hold that we cannot “sense” feeling sick or dizzy or happy and so on.



“joy” or “truth” seem to be known to us only insofar as the ideas of these objects conjure up some feeling or other sensible representation *in concreto*.

To take an example, let us consider the idea of a geometric “point.” Euclid defined a “point” as “that which has no part.”<sup>4</sup> He also defined a “line” as a “breadthless length” and tells us that two lines that intersect do so “at a point.” It is from these two ideas that we obtain a mental picture of a “point” by, for instance, first imagining a ball or a round pebble *and then* imagining that this ball or pebble shrinks to a smaller and smaller size until, ultimately, “it can shrink no more” without “ceasing to exist.” Of course, our mental picture of this always stops before the ball disappears completely but we tell ourselves that if our eyesight were not limited in resolution this *process of shrinking*, if continued indefinitely, would still “look the same.” Even though a Euclidean point is a supersensible object, we “make sense of it” by “envisioning” the process described above (or some similar process). But, consequently, our representation of a point is given by “picturing” this dynamic *process* acting on a sensible object (e.g., the ball or pebble). It is not the point as an object in itself that we represent, but rather how we would set off to “get to” the point.

This example illustrates that when we say that an intuition is a representation of an appearance, this does not imply that the appearance so represented is confined to having to have a representation fixed at one moment in time nor that the representation contains no representation of “change” or “motion.” Indeed, our idea of a Euclidean point loses its meaning if we place such a restriction on the representation of an appearance.

It is an easy matter to make for ourselves descriptions of other such supersensible objects, and these descriptions always seem to show themselves in much the same way, i.e., as some process or sequence of representations of sensible appearances. What this establishes is that even ideas of supersensible objects can be exhibited in terms of sensible objects. Now let us ask the reverse: Is there *any* idea of a supersensible object that we do *not* exhibit to ourselves in some sensible fashion? If, for example, we try to explain “love” do we not always find ourselves describing the idea of this object through sensible concrete examples, similes or metaphors (e.g. “My love is as a fever”<sup>5</sup>)? Even when our language seems to have no words that do full justice to the object – a clammy fear, a blinding rage, a sweet ecstasy – the kinesthetic and affective perceptions these words attempt to name are known by us *sensually* and not intellectually. If, as indeed seems to be the case, we cannot find a description for any object that does not at some level involve sensible representations, we should accept the following acroam as a fundamental principle: **Every appearance of an object is represented in sensible intuition.**

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<sup>4</sup> Euclid, *Elements*, Bk I, def. 1.

<sup>5</sup> Wm. Shakespeare, Sonnet CXLVII.

## Concepts

In representing an appearance, an intuition is *singular*, i.e., it represents the specific appearance and nothing more nor less. While we have argued that a manifold of pre-objective representations of sense is contained in an intuition, this does not mean that the elements of this manifold are separated in consciousness within an intuition. Quite the opposite is the case; these elements of the manifold in intuition are, by themselves, non-objective and undifferentiated from the intuition as a whole.

Yet we also realize that the phenomenon of intelligence requires the ability to objectify these details and recombine them in other forms as representations of other appearances. It is for the purpose of describing and explaining this phenomenon that we introduce the idea of concepts. Our most elementary description of this idea is that concepts are objective representations. However, the object of a concept is not the appearance. What, then, does a concept represent (matter of a concept) and how does it represent it (form of a concept)?

The role we have cast for concepts involves the “breaking asunder and reuniting” of intuitions. Thus a concept must draw its matter of representation from intuition and must produce as its outcome something that can in turn be re-presented as an intuition. The representing process in which concepts are involved therefore begins and ends in intuition. Kant phrased this idea in the following way:

Our cognition springs from two fundamental sources in the mind, the first of which is the reception of representations (the receptivity of impressions), the second the ability for making out an object by means of these representations (spontaneity of concepts); through the first an object is *given* to us, through the second it is *thought* in relationship to that representation (as a mere determination of the mind). Intuition and concepts therefore constitute the elements of all our cognition, so that neither concepts without intuition corresponding to them in some way nor intuitions without concepts can yield knowledge<sup>1</sup> . . . Thoughts without content are empty, intuitions without concepts are blind [KANT1a: 193-194 (B: 74-75)].

We have already seen that the copy of reality hypothesis is to be rejected and, consequently, intuitions are constructed by the phenomenon of mind. For concepts we seem to have two choices with regard to the matter of their matter (Quality). In the first case we could suppose that the Quality of a concept consists of a copy of some part of the Quality of an intuition. However, this supposition is nothing other than the copy of reality hypothesis stubbornly re-asserting itself once again in a more subtle form. In the second case we could suppose that, rather than containing a copy of some part of an intuition, the Quality of a concept is merely some representation from

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<sup>1</sup> *Erkenntnis*. This word can be translated either as "cognition" or as "knowledge." Often English translations of *Kritik der reinen Vernunft*, including [KANT1a], translate *Erkenntnis* as "cognition" exclusively. However, in the context of the passage quoted above, "knowledge" is the more accurate rendition. See the Glossary of Technical Terms for the distinction between knowledge and cognition.

which – in cooperation with other representations of Quantity, Relation, and Modality – *an intuition can be re-constructed* (“re-presented”). Put another way, a concept need not contain a copy of a partial intuition if instead it contains sufficient information to make possible the *construction* of an intuition in sensibility.

As an aid to understanding this second choice, let us provisionally suppose that sense is the capacity to present some sort of pre-intuitive representation that we will call **sensation**, and let us further suppose that the matter of an intuition is constituted by sensation. We will not regard sensation as identical to “sense” in the physiological context, but only as some representation of how sense affects the subjective state of mind. In other words, sense *makes* sensation. If we are willing to suppose this, then it is equally permissible to suppose that sensation might also arise from a source other than the traditional ‘five senses.’ In neuroscience we have a model of the brain where a division something like this is employed, namely the division between “early” sensory cortices and “higher-order” association cortices, basal ganglia, and limbic structures [DAMA2: 102]. To use this brain model as an analogy, if we have different “major pathways” running between these structures it is quite conceivable that the perception of sensation can arise both via the “outer senses” and alternately via higher brain centers.

Now let us consider the concept. As a representation, we require that a concept ‘contain’ in some fashion or another the information represented in some part of an intuition (the “breaking asunder” of intuition). However, this in no way requires that a concept be a copy of a piece of intuition. It merely requires that the concept represent the information in such a way that: 1) the “reuniting” function is possible; and, 2) the representation contained in a manifold of such concepts is sufficient to permit re-presentation in intuitive form. Put another way, all we require in our idea of a concept is that this concept should be capable of serving as a *rule* for the construction of other objective representations of appearances. The object of a concept is not an appearance but an intuition, and **a concept is the representation of a rule governing the construction of this intuition:**

Even less does an object of experience or an image of it ever reach the empirical concept, rather the latter is always related immediately to the schema of the imagination, as a rule for the determination of our intuition in accordance with a certain general concept. The concept of a dog signifies a rule in accordance with which my imagination can specify the shape of a four-footed animal in general, without being restricted to any single particular shape that experience offers me or any possible image that I can exhibit *in concreto* [KANT1a: 273 (B: 180)].

We have in our soul two kinds of determinations; there are either representations themselves (e.g. understanding), or they have reference to representations (e.g. will). The capacity for representations is *understanding* insofar as it has concepts as grounds - *sensibility* insofar as it has intuition as grounds. - Concept is a representation insofar as it is made into a rule. (In logic *repraesentatio communis* - feature common to several.) Understanding [is] thus [a] capacity for rules [KANT19: 373 (28: 672)].

Because a concept is not to be considered a mere copy of a piece of intuition, concepts must come into being through *construction*. Just as an empirical intuition required that mind possess the “know-how” (*pure* intuition) for constructing it, an empirical concept likewise presupposes the necessity for mind to contain the “know-how” for constructing the empirical rules that concepts represent. If we call the act of structuring a concept the **determinant judgment**, the rules that govern this act must necessarily exist *a priori* as a capacity of mind for the construction of empirical concepts to be possible. We must have, in other words, *rules governing the construction of rules*. Such a ‘meta-rule’ deserves the name *pure notion of understanding*. Inasmuch as such a rule pertains to the construction of empirical concepts rather than the reconstruction of intuitions, the object of such a pure notion is an empirical concept and not an intuition. Therefore we need not require (and, indeed, shall find it impossible to require) that a pure notion have a possible exhibition in an intuition. We may display the notion’s handiwork, but not the notion itself.

The word **notion** as a technical term allows us to draw a clear distinction between *a priori* and experiential concepts. The use of this term will let us avoid having to explicitly write “empirical concept” and “pure concept” at every point in our discussion (in order to avoid confusing the one for the other). Thus, “concept” without an adjective modifier can be reserved for “empirical concept”; “notion” designates pure and *a priori* “know-how” necessary for the possibility of empirical concepts. A notion is like a “concept of a concept.”

## § 6. Kant’s Threefold Synthesis of Experience

We have come up with the ideas of cognition in the previous section in large part by making rational arguments concerning “what is clearer to us” with regard to our thought experiences. While our primary attention has been focused on the ideas of “intuition” and “concept,” we have found it necessary to, at the same time, posit the existence of certain acts of mental construction regarding these representations. Our task in this section is twofold: 1) to check these rational arguments against empirical facts to ascertain if our natural experience is congruent with this theory; and, 2) after finding that it is, to examine in more detail the Nature of these constructive acts.

*Comment:* In drawing upon the empirical findings of various researchers, it is my decision to report these findings in their own words (or, rather, in their words as translated into English in the case of non-English-speaking authors). This is, I think, the best way to proceed, but it does present us with a certain difficulty that must be recognized by the reader. Different writers often employ very fundamental terms – such as concept, intelligence, thinking, intuition, etc. – in a

manner quite different from the technical usage made of these words in this treatise. The justification for this, if one is needed, could be said to reside in the presumption that these words are so commonplace and self-evident that “everyone knows what they mean.” To paraphrase Descartes, “who does not know what *concept* means?”

When the topic is the phenomenon of mind, the ambiguous usage of fundamental terms we use to describe mental phenomena presents dangers to our comprehension of theory that are only too obvious. Not the least of these is adultomorphism – the tendency to view certain ideas expressed by these words in the context of everyday adult usage. For example, Piaget and his collaborators use the word “thought” in a context that requires the thinking Subject to have knowledge of himself, knowledge of permanent “objects” (things) and so on. Thus, an infant does not “think” in the sense in which they use this word since he lacks the “concepts” necessary for his mental actions to be called “thought” in their sense of the word.

This treatise is going to use the word “thinking” in the following technical sense: *Thinking is cognition through concepts*. In this sense of the word, we hold that an infant does indeed think. Likewise, Piaget and his collaborators use the word “concept” in a manner quite different from that given in the previous section – i.e. that a concept is a rule for the construction of intuitions. Thus they hold that the newborn infant in the first stages of life does not have “concepts” whereas the view in this treatise holds that a concept is a fundamental type of representation and its construction takes place from the beginning of “mental life.” A number of other such instances will likewise arise which will, if one is not aware of the different meanings ascribed to key words by different authors, present the appearance of contradictions in their findings from those of this treatise. When the contradiction is real – that is, when the findings here actually are in disagreement with other theories such as the copy of reality hypothesis – I will point this out explicitly. In many other cases, however, the apparent contradiction is merely one of semantics and, inasmuch as other authors frequently make no attempt to clarify or explain terms regarded here as fundamental, I ask the reader to recognize this situation and judge cases of semantic contradiction accordingly.

## § 6.1 Functional Invariants and the Theory of Assimilation

The empirical findings we summarize in this section are due primarily to the work of Piaget and his collaborators. There are, of course, many other researchers engaged in developmental psychology and not all of these researchers are in agreement with Piaget on various points. Some of these competing theories are discussed and answered by Piaget himself in his various publications, and we have neither the time nor the space in this treatise to wander off into discussions of every particular point of contention. Some of these points, which some schools of psychology might regard as very important, will be passed over in silence in this treatise. A word

of justification for this is therefore in order. Why the focus on Piaget?

First let me dispel any suspicion on the reader's part that I have given prominence to Piaget's work in this treatise simply because his empirical results support Kant's theory. They do, but more importantly his findings greatly help to clear up a number of ambiguities in interpreting Kant. In the work presented here, Piaget's empirical results played an important role in the formulation of a foundation for a theory of mental physics, not an *ex post facto* role. The prominence given to Piaget's work in this treatise is a consequence of the systematic and coherent nature of his work – a coherence in doctrine that stands up throughout more than sixty years of research. No other doctrine of empirical psychology with which I am acquainted exhibits this same awesome degree of connectedness and coherence. In Piaget's doctrine we find the closest approach to achieving a *proper* science (in Kant's terminology) of psychology that I have seen.

This does not, however, mean that the theory presented in this treatise agrees in all particulars with Piaget's pure doctrine (i.e., Piaget's "genetic epistemology"). As I stated in Chapter 1, the weakness of Kant's work is its scant treatment of the empirical; that of Piaget's work is that its rational element does not go deep enough. The observations and analyses reported by Piaget and his collaborators are what I find convincing, not the metaphysics of his genetic epistemology. Taken together, however, these two systems form a more complete and unified system. Let this be my apology for what might appear to be a prejudicial focus on Piaget's work. We will later have occasion to review important findings of other psychologists as well.

Piaget and Bärbel Inhelder, his long-time collaborator, have briefly summarized the main points of their research in *The Psychology of the Child* [PIAG15]. The first paragraph of the first chapter of this book gives a concise encapsulation of Piaget's most fundamental finding resulting from his landmark work, *The Origins of Intelligence in Children*:

If the child partly explains the adult, it can also be said that each period of his development partly explains the periods that follow. This is particularly clear in the case of the period where language is still absent. We call it the "sensori-motor" period because the infant lacks the symbolic function; that is, he does not have representations by which he can evoke persons or objects in their absence. In spite of this lack, mental development during the first eighteen months of life is particularly important, for it is during this time that the child constructs all the cognitive substructures that will serve as a point of departure for his later perceptive and intellectual development, as well as a certain number of elementary affective reactions that will partly determine his subsequent affectivity [PIAG15: 3].

For our purposes in this treatise two particular things are noteworthy in this paragraph. First, note that Piaget uses the term "representations" in a manner different from our use of that term here. "Representation" for Piaget and Inhelder refers to things (a chair, a sunrise, a cool breeze) and has a connotation similar to that of an idea. They make the meaning of their use of this term more clear in another of their landmark works:

Perception is the knowledge of objects resulting from direct contact with them. As against this, representation or imagination involves the evocation of objects in their absence or, when it runs parallel to perception, in their presence. It completes perceptual knowledge by reference to objects not actually perceived. Thus as an example, one may recognize a 'triangle' and liken the given figure to the entire class of comparable shapes not present to perception.

Hence if representation can be said to extend perception, it can also be said to introduce a new element peculiar to itself. What is distinctive of representation is a system of meanings or *significations* embodying a distinction between that which signifies and that which is signified. Admittedly, perception itself contains significations (for example, forms seen in perspective are related back to the constant form) but in this case they are merely signs or pointers, part and parcel of the sensorimotor schema. In contrast to this, representational signification draws a clear distinction between the *significants* or signifiers which consist of signs (ordinary or mathematical language) and symbols (images, imitative gestures, sketches), and the things they signify (in the case of spatial representation; spatial transformations, spatial states, etc.) [PIAG5: 17].

This difference in the use of the term “representation” (and also, for that matter, “perception”) must be kept in mind in order to prevent unnecessary confusion when we quote Piaget’s work.

The second thing to note from the paragraph quoted from [PIAG15] is the more significant. This is the finding that the child “constructs all the cognitive substructures” that go into the making of his empirical knowledge. Piaget utterly rejects the copy of reality hypothesis [PIAG5: 3] and finds this hypothesis completely contradicted by his psychological studies of children. He finds instead that our knowledge of the world arises from an on-going process of “evolving” mental “structures” which has its roots in hereditary reflexes and instincts.

Whatever criteria for intelligence one adopts . . . everyone agrees in recognizing the existence of an intelligence before language. Essentially practical - that is, aimed at getting results rather than at stating truths - this intelligence nevertheless succeeds in eventually solving numerous problems of action (such as reaching distant or hidden objects) by constructing a complex system of action-schemes and organizing reality in terms of spatio-temporal and causal structures. In the absence of language or symbolic function, however, these constructions are made with the sole support of perceptions and movements and thus by means of a sensori-motor coordination of actions, without the intervention of representation or thought [PIAG15: 4].

Like “representation” and “perception,” Piaget uses the term “thought” in a different manner<sup>2</sup> than that which is adopted by this treatise – i.e. thinking is cognition through concepts – and so we again have, in the last sentence quoted above, an appearance of contradiction (between Piaget and this treatise) of a semantic origin (since in the view adopted here thinking is an activity present in all acts of cognitive representation beyond immediate intuition). Passing over these semantic difficulties, let us focus on the main point, the *construction* of various mental “structures.” Note the close affinity between this idea of “construction” and the role to which we have assigned the idea of “concepts” earlier. Piaget and his co-workers document the empirical

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<sup>2</sup> In point of fact, Piaget is often rather vague about his definition of the term "thought." Perhaps his most detailed explanation of his use of the term is found in *The Language and Thought of the Child* [PIAG22: 43-49] where he distinguishes between "directed or 'intelligent' thought" and "undirected or 'autistic' thought." He calls these "two fundamental modes of thought," but in fact his description of them shows both to be rather "high-level" and bordering on a transcendent rather than transcendental nature.

evidence that establishes the factual basis for saying mental structures are constructed; with empirical concepts, we have the idea for one element of this structure, namely the empirically-founded *rules* of a given construct as these rules pertain to the cognitive element. (We have not, as of yet, spoken of the “motor-regulatory” element of Piaget’s structure which is manifested in physical movements; we shall, of course, deal with this motor-regulatory aspect later in this treatise under the name ‘motoregulatory expression’).

Having established the constructive Nature of mental representations empirically, Piaget goes on to establish another finding of a surprising and most fundamental nature: *underlying all mental construction at all stages of life, there exists a fundamental and invariant process by which all such mental activities take place*. From the cradle to the grave, from the first infantile development of acquired habits to the most refined workings of intellect, the phenomenon of mind follows one basic psychological process by which empirical knowledge is obtained, refined, and developed. Piaget calls this fundamental psychic fact *the process of equilibration* [PIAG19].

We shall have to go into great detail regarding the process of equilibration at a later point in this treatise, particularly when we deal with that aspect of the Organized Being model we called *psyche* in Chapter 1. For the present we will confine ourselves to two aspects of the process of equilibration that have a direct bearing on representation. These aspects are: 1) the functional invariants; and, 2) assimilation.

### The Functional Invariants

Piaget was a biologist by training and the metaphysical underpinnings of his psychological research were greatly influenced by this. He regarded intelligence as merely an extension of biological functioning and relied upon certain facts known of biological organisms for guidance in examining psychological phenomena.<sup>3</sup> In particular, he gave great notice to two factors present in all biological forms at all stages of life: **organization** and **adaptation**. These are the functional invariants.

Organization is the idea of the *functional totality* of an organism or, in our terminology, of an *organized being*. While we may differentiate the *parts* of a being (e.g., brain, stomach, liver, etc.), these parts and what they do are always *functionally interconnected* within the whole of the organized being. Organization is the idea that whenever we consider any one part of the system, we must never neglect the connection of that part in coördination with all the rest.

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<sup>3</sup> While most (perhaps all) rationalist philosophers would likely find this to be appalling, I suspect Aristotle would approve. Where one gets his or her ideas is, I think, less important than how well those ideas agree with the totality of facts we have at hand. Furthermore, in our model of the Organized Being the division between *nous* and *soma* is merely a logical and not a real division. We never find "mind" without also finding "brain."



Concerning the relationships between the parts and the whole which determine the organization, it is sufficiently well known that every intellectual operation is always related to all the others and that its own elements are controlled by the same law. Every scheme is thus coordinated with all the other schemes and itself constitutes a totality with differentiated parts. Every act of intelligence presupposes a system of mutual implications and interconnected meanings [PIAG1: 7].

Organization, in Piaget's view, fills the role of a *regulating function* for the 'intellect.' Where there is disunity, e.g. lack of coordination between, say, the schemes of vision and those of prehension during the first months of life, the organization of mind is such that mind deals with accumulating experience in such a way that eventually these schemes will come to be coordinated with each other. In other words, mind builds an *open* system of mental structures in such a way that each new mental construct works toward the achievement of successively better levels of mental "equilibriums" – which Piaget rather loosely describes as a 'balance' between cognitive 'disturbances' and the compensating reactions to these disturbances<sup>1</sup> [PIAG19: 73]. This is achieved through a hierarchy of regulations:

In general we speak of regulation when the reaction,  $A'$ , of an action,  $A$ , is modified by the original action, i.e., there is a secondary effect of  $A$  on the new development  $A'$ . The regulation can be seen as a correction by  $A$  (negative feedback) or reinforcement (positive feedback) [PIAG19: 18].

In summary, if the cognitive equilibration, in the majority of situations, is a progression toward a better equilibrium, it is then impossible to distinguish what in these increasing equilibrations is due to compensations, that is, the equilibration as such, and what offers constructions proper. Constructions are indicated by new compositions or the extension of the field . . . On the one hand, any new construction calls for compensations because it inserts itself in re-equilibration processes (to correct certain defects or previous limitations or to modify the process of differentiations and integrations) along with its own regulations. On the other hand, any increasing equilibration involves the necessity of new constructions and vice-versa, as we have just seen in (PIAG19: §6).

It is worth noting that such a proposition does not simply result from a theoretical analysis of basic notions . . . imposed on us by our previous work on cognitive development. Recently it has received an experimental confirmation with the fine research on learning by Inhelder, Sinclair, and Bovet<sup>2</sup> [PIAG19: 38-39].

Piaget's second functional invariant is adaptation. While organization regulates the process by which new structures are formed and old ones are modified, adaptation *is* the process that carries out these constructions. In Piaget's words, "Intelligence is an adaptation" [PIAG1: 3]. The idea of adaptation involves two related ideas, namely the idea of the *state of* adaptation and the idea of the *process of* adaptation. Letting  $a$ ,  $b$ , and  $c$  represent organized elements making up the mental state, let  $x$ ,  $y$ , and  $z$  represent environmental factors, e.g. effects produced by the perception of an appearance. Piaget's scheme of organization can then be written in the form [PIAG1: 5]:

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<sup>1</sup> We will later provide a precise definition of equilibrium.

<sup>2</sup> [INHE2].

- (1)  $a + x \rightarrow b$ ;
- (2)  $b + y \rightarrow c$ ;
- (3)  $c + z \rightarrow a$ ; *etc.*

Piaget regards this scheme of organization as quite general and as applying not only to physical adaptation of the organism itself but also to the state of the mental structures. Let us take a look at how Piaget described this idea:

The organism is a cycle of physicochemical and kinetic processes which, in constant relation to the environment, are engendered by each other. . . . The processes (1), (2), etc., may consist either of chemical reactions (when the organism ingests substances  $x$  which it will transform into substance  $b$  comprising part of its structure), or of any physical transformations whatsoever, or finally, in particular, of sensorimotor behavior (when a cycle of bodily movement  $a$  combined with external movements  $x$  result in  $b$  which itself enters the cycle of organization). The relationship which unites the organized elements  $a$ ,  $b$ ,  $c$ , etc., with the environmental elements  $x$ ,  $y$ ,  $z$ , etc., is therefore a relationship of *assimilation*, that is to say, the functioning of the organism does not destroy it but conserves the cycle of organization and coördinates the given data of the environment in such a way as to incorporate them in that cycle. Let us therefore suppose that, in the environment, a variation is produced which transforms  $x$  into  $x'$ . Either the organism does not adapt and the cycle ruptures, or else adaptation takes place, which means the organized cycle has been modified by closing up on itself:

- (1)  $a + x' \rightarrow b'$ ;
- (2)  $b' + y \rightarrow c$ ;
- (3)  $c + z \rightarrow a$ .

If we call this result of the pressures exerted by the environment *accommodation* (transformation of  $b$  into  $b'$ ), we can accordingly say that *adaptation is an equilibrium between assimilation and accommodation*.

This definition applies to intelligence as well. Intelligence is *assimilation* to the extent that it incorporates all the given data of experience within its framework. Whether it is a question of thought which, due to judgment, brings the new into the known and thus reduces the universe to its own terms or whether it is a question of sensorimotor intelligence which also structures things perceived by bring them into its schemes, in every case intellectual adaptation involves an element of assimilation, that is to say, of structuring through incorporation of external reality into forms due to the subject's activity. Whatever the differences in nature may be which separate organic life . . . from practical or sensorimotor intelligence (which organizes acts and assimilates to the schemes of motor behavior the various situations offered by the environment), and separate them also from reflective or gnostic intelligence (which is satisfied with thinking of forms or constructing them internally in order to assimilate to them the contents of experience) - all of these adapt by assimilating objects to the subject.

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

In short, intellectual adaptation, like every other kind, consists of putting an assimilatory mechanism and a complementary accommodation into progressive equilibrium [PIAG1: 5-7].

Piaget's theory is tainted somewhat by a certain amount of realist prejudice, e.g. "all of these adapt by assimilating objects to the subject," but the principal idea is the construction of new mental structures by assimilation (taking new situations into previously existing structures) and accommodation (modifying the old structures).

### Assimilation and Equilibration

It has been supposed by some (e.g., Wadsworth, [WADS: 10-16]) that the process Piaget has described above permits the generation of entirely new structures if the new "elements" do not readily fit into an existing structure (accommodation by creation); but note that this is distinctly *not* what Piaget has said. If a new perception cannot be accommodated by an existing structure, the result is not the creation of an entirely new structure but the *rupturing* of the adaptation cycle.

But if this is the case, how does the process of intelligence get started in the first place? What provides the initial structure at birth into which new experiences can be assimilated? Piaget answers that from birth (and probably somewhat before) the child is in possession of a small set of hereditary sensorimotor *reflexes* (the sucking reflex, the grasping reflex, crying, vocalization, movement and positions of the arms, head, trunk, etc.). The elementary reflexes provide an innate set of initial structures upon which everything that comes later is built through assimilation and accommodation.

This picture is, of course, complicated somewhat by the fact that the child is not physically fully mature at birth and that biological maturations will occur with the passage of time. Puberty is one such example. Nevertheless, the crux of Piaget's research findings is the theory of assimilation (the adaptation functional invariant) and equilibration (the regulative, i.e. organization, functional invariant). At the core of this theory are two empirical principles [PIAG19: 7-8]:

**Piaget's First Principle of Equilibration:** Any scheme of assimilation tends to feed itself, that is, to incorporate outside elements compatible with its nature into itself. This postulate assigns a driving force to the process and must therefore assume activity on the part of the subject, but by itself does not imply the construction of novelties; a rather large scheme (such as that of "existence") could assimilate the entire universe without being modified or enriching itself in compensation.

**Piaget's Second Principle of Equilibration:** The entire scheme of assimilation must alter as it accommodates to the elements it assimilates; that is, it modifies itself in relation to the particularities of events but does not lose its continuity (hence it can maintain closure and function as a cycle of interdependent processes) nor its earlier powers of assimilation. This second

postulate (already proved valid on the biological level by the formation of phenotypical "accommodates") states the necessity for an equilibrium between the assimilation and the accommodation in order for the accommodation to succeed and remain compatible with the cycle, modified or not.

These principles were deduced after years of study and observation of the behaviors of children ranging in age from newborn to middle teenagers. In his work Piaget, like James, was willing to discuss philosophical considerations, but in his findings he remains very much within the borders of strict scientific methodology. As the eminent psychologist E. Claparède noted in his preface to Piaget's *The Language and Thought of the Child*:

Our author has a special talent for letting the material speak for itself, or rather for hearing it speak for itself. What strikes one in this first book of his is the natural way in which the general ideas have been suggested by the facts; the latter have not been forced to fit ready-made hypotheses.

It is in this sense that the book before us may be said to be the work of a naturalist. And this is all the more remarkable considering that M. Piaget is among the best informed men on all philosophical questions. . . . But this thorough mastery of other spheres of knowledge, far from luring him into doubtful speculation, has on the contrary enabled him to draw the line very clearly between psychology and philosophy, and to remain rigorously on the side of the first. His work is purely scientific [PIAG22: xv-xvi].

This faithful adherence to observable phenomena is, of course, what gives strength to Piaget's empirical principles stated above. At the same time, though, it does limit the resulting theory to the realm of description that can deal with large themes but not with the fine details of the workings of the phenomenon of mind. The knowledge so gained is of great value, particularly in helping us move closer toward Aristotle's "what is clearer by nature"; but to approach this limit further we must explore more deeply the transcendental ramifications of equilibration. For that task, we next consider this construction process from the perspective of our analysis of representation.

## § 6.2 *A Priori* Foundations of the Possibility of Experience

Piaget's results lend empirical support to the idea of the constructive nature of representation we have discussed in §5. In particular, his findings in support of a functional (i.e., *rule based*) nature of representations is congruent with treating concepts as rules for the construction of intuitions rather than as representations with immediate reference to appearances of objects. Let us now see what implications this has for the process by which Kant's *Verstandes-Actus* must be viewed.

Comparison, reflexion, and abstraction all pertain, directly or indirectly, to the matter of representing, i.e. the representations themselves. What we must now consider is the schema or form of this representing. There are numerous questions that must be asked concerning the nature of the *Verstandes-Actus*. For instance, are the comparates *intuitions* or can they also be *concepts* and perhaps other types of representations? Is the outcome of the *Verstandes-Actus* an intuition or

a concept or could it be any of a number of other types of representation? What is it that determines which representations (from among our enormous collection of representations) shall serve as comparates and which will not? In short, what are the “functional invariants” specific to the *Verstandes-Actus*?

In his *Logik* and his *Critique of Pure Reason* Kant often speaks of the *Verstandes-Actus* as being applied to concepts. However, we should cautiously take note that he does not say whether he means these are applied *directly* to concepts or only *mediately* to concepts by way of intuitions. He *does* say, quite clearly, “we recognize the object when we have brought about synthetic unity in the manifold of intuition,”<sup>3</sup> and “All knowledge [*Erkenntnis*] requires a concept, however imperfect or obscure it may be; but as far as its form is concerned the latter is always something general, and something that serves as a rule” [KANT1: 125 (A:105-106)]. Let us therefore ask: Do our conscious objective representations (cognitions) pertain only to the representation of appearances or do they also pertain to the perception of the elements of the representing act itself (i.e. the rules = concepts)?

A moment’s reflection on this question shows that it is the former that is the case and never the latter. Even when one’s mind is turned to very abstract reasoning, this always involves knowledge that we can only regard as objective in the sense of pertaining to the appearance of some object. In other words, we are conscious of the object of our thinking, but never conscious of the process itself. If I say, “I know I am thinking,” or “I am conscious of the fact that I am thinking,” what I am actually conscious of is merely the appearance of my own activity in self-reflection and not the activity itself. Our consciousness of a concept is never a *direct* consciousness, but only a mediate consciousness through the intuition for which it is the rule of construction. Hence it would seem we exhibit a certain profound wisdom when we say of a concept *it makes sense*.

### “Knowledge” and “Experience”

This brings us to a point of some importance, namely what we mean by the term *knowledge*. Unlike some other languages, such as German or Latin, the English language uses this one word to cover many connotations:

**knowledge**, n. [ME. *knowlege*, *knowleche*, knowledge; *knowen*, to know, and *-leche*, *-leke*, from Ice. *-leikr*, *-leiki*, a suffix used in forming abstract nouns].

1. a clear and certain perception of something; the act, fact, or state of knowing; understanding.

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<sup>3</sup> The original wording was: *wir erkennen den Gegenstand, wenn wir in dem Mannigfaltigen der Anschauung synthetische Einheit bewirkt haben*. This phrase has been rendered differently by other translators (e.g. the Politis translation), and sometimes these differences affect the technical meaning.

2. learning; all that has been perceived or grasped by the mind.
3. practical experience; skill; as, a *knowledge* of seamanship.
4. acquaintance or familiarity (with a fact, place, etc.).
5. cognizance; recognition.
6. the body of facts accumulated by mankind.
7. acquaintance with facts; range of awareness or understanding.

For our purposes we can ignore dictionary definition (6) as having no bearing on an *individual's* knowledge. For the ones which remain, we may note that the differences among these definitions more or less correspond to differences in degrees of knowledge or the horizon (scope) of knowledge.

If we are to use this word in a technical sense, it would be well for us to draw some clearer distinctions than those given above. While there are, of course, different ways in which a classification of different degrees of knowledge may be drawn up, it is instructive to take a look at the classification given by Kant in [KANT8: 71 (9: 64-65)]:

**First Degree:** *vorstellen* - to represent something to oneself.

**Second Degree:** *wahrnehmen (percipere)* - to perceive.

**Third Degree:** *kennen (noscere)* - to be aware of, i.e. to represent in conscious comparison with other things both as to sameness and as to difference.

**Fourth Degree:** *erkennen (cognoscere)* – to recognize, i.e. to be aware of (*kennen*) with consciousness of this awareness. (This implies the making of a concept, hence *re-cognize*).

**Fifth Degree:** *verstehen (intellegere)* - to conceive by means of concepts; to understand.

**Sixth Degree:** *die Vernunft erkennen (perspicere)* - to recognize by means of reason; to have insight.

**Seventh Degree:** *begreifen (comprehendere)* - to comprehend.

This classification is made with reference to the thinking Subject and is, consequently, congruent with Kant's Copernican perspective. Kant called these the seven *degrees of objective content* of our knowledge.<sup>4</sup> Note that each of these degrees is descriptive of a particular scope of knowledge (*Erkenntnis*). In other words, in all cases the "thing" called knowledge is a representation of some object X, differing merely in the extent of this representation. This is in contrast to, say, English definitions (2) and (6) which better fit the German *Wissen* (which is also rendered as "knowledge" in English). Just as we found earlier that we needed to draw the distinction between *Dasein* and *Existenz* when speaking of existence, so now we see an important distinction between the knowledge of an object – *Erkenntnis*, the *representation* of which *in total* is *cognition* (L. *cognitio*) – and Knowledge as an Object – *Wissen* (L. *scientia*, Gr. *epistème*). Since in this treatise we are most often concerned with the former, I will use the word "knowledge" by itself to refer to *Erkenntnis*; on those rarer occasions when I must refer to the latter, I will write this as "Knowledge (*Wissen*)."

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<sup>4</sup> *des objectiven Gehaltes unserer Erkenntnis überhaupt*

This brings us to a related idea, namely the idea of something called *experience*. Let us recall Kant's famous opening line in the introduction to *Critique of Pure Reason*: "That all our knowledge (*Erkenntnis*) begins with experience there can be no doubt" [KANT1: 30 (B: 1)]. What is this "experience" of which Kant speaks?

The idea is an old one and, as we have seen so often, is not particularly well delimited. In English we have:

**experience**, n. [ME. *experience*; L. *experientia*, a trial, proof, experiment, from *experiens* (-*entis*) ppr. of *experiri*, to try, put to test].

1. trial, proof, or test [Obs.].
2. an actual living through an event or events; personally undergoing or observing something or things in general as they occur.
3. anything observed or lived through; as, our trip was a pleasant *experience*.
4. all that has happened to one; everything one has seen or done; as, it hasn't happened in my *experience*.
5. effect on one of anything or everything that has happened to him; individual reaction to events, feelings, etc.; as, what was your *experience* with the work?
6. (a) an activity that includes training, observation, or practice, and personal participation; (b) the period of such activity; as, teaching *experience*.
7. knowledge, skill, or practice resulting from this.

Less recently Aristotle said of it:

The animals other than man live by appearances and memories, and have but little of connected experience<sup>5</sup>; but the human race lives also by art<sup>6</sup> and reasonings<sup>7</sup>. And from memory experience is produced in men; for many memories of the same thing produce finally the capacity for a single experience. Experience seems to be very similar to science<sup>8</sup> and art, but really science and art come to men *through* experience; for 'experience made art', as Polus says, 'but inexperience luck'. And art arises, when from many notions gained by experience one universal judgment about similar objects is produced. For to have a judgment that when Callias was ill of this disease this did him good, and similarly in the case of Socrates and in many individual cases, is a matter of experience; but to judge that it has done good to all persons of a certain constitution, marked off in one class . . . - this is a matter of art.

With a view to action experience seems in no respect inferior to art, and we even see men of experience succeeding more than those who have theory without experience. The reason is that experience is knowledge<sup>9</sup> of individuals, art of universals, and actions and productions are all concerned with the individual; for the physician does not cure a man, except in an incidental way, but Callias or Socrates or some other called by some such individual name, who happens to be a man. . . But yet we think that *knowledge* and *understanding*<sup>10</sup> belong to art rather than to

<sup>5</sup> ἐμπειρίας, *emperias*.

<sup>6</sup> τέχνη, *tekhne*.

<sup>7</sup> λογισμοῖς, *logismois*.

<sup>8</sup> ἐπιστήμη, *episteme*.

<sup>9</sup> *gnōsis*.

<sup>10</sup> τό γε εἰδέναι καί τὸ ἐπαῖεν. This "knowledge and understanding" has a different connotation than that of *gnōsis*. "Understanding" here has the connotation of proficiency.

experience, and we suppose artists to be wiser than men of experience (which implies that wisdom depends in all cases rather on knowledge); and this is because the former knows the cause, but the latter do not. For men of experience know that the thing is so, but do not know why, while the others know the 'why' and the cause. . . And in general it is a sign of the man who knows, that he can teach, and therefore we think art more truly knowledge than experience is; for artists can teach, and men of mere experience cannot [ARIS7: 1552-1553 (980<sup>b</sup>26 - 981<sup>b</sup>9)].

If we seek to untie the knots in this bulrush, Aristotle seems to be equating “experience” with “knowledge of individuals” – i.e., specific knowledge (*gnôsis*) of a particular *thing*. This can hardly be what Kant meant, for this would be equivalent to saying “all our knowledge begins with knowledge.” Part of the confusion here can be laid at the door of the difficulties that arise from having to use one English word – “knowledge” – to translate multiple ideas and connotations that are expressible in Greek using different words. Aristotle is a little clearer on this question at the end of his *Posterior Analytics*:

So from perception there comes memory, as we call it, and from memory (when it occurs often in connection with the same thing), experience; for memories that are many in number form a single experience. And from experience, or from the whole universal that has come to rest in the soul (the one apart from the many, whatever is one and the same in all those things), there comes a principle of skill and of understanding - of skill if it deals with how things come about, of understanding if it deals with what is the case.

Thus the states neither belong in us in determinate form, nor come about from other states that are more cognitive; but they come about from perception - as in a battle when a rout occurs, if one man makes a stand another does and then another, until a position of strength is reached. And the soul is such as to be capable of undergoing this [ARIS4: 165-166 (100<sup>a</sup>4-14)].

For Aristotle, who believed in the copy of reality hypothesis, it was enough that “the senses” innately “perceived the real world” directly. From this starting point, the world could “impress itself” on the soul, producing memories in the process, until in their multitude these memories could “make a stand” and produce “experience.”

A more recent view, collegial to Aristotle’s general outlook if not to the particulars of Aristotelian metaphysics, was expressed by Husserl in his phenomenology theory. For Husserl certain objects are “self-evident” (*Evidenz*) in the sense that the mere perception of them produces in the mind “consciousness of any kind which is characterized relative to its object as self-giving this object in itself, without asking whether this self-giving is adequate or not” [HUSS2: 20]. The distinction between this view and the copy of reality view would seem to be one of a difference in the *certainty* and *completeness* of what is “given by” the external environment. For Aristotle the senses can never be deceived (although the interpretation of the senses by the “soul” can be mistaken). Thus, sensible impressions are true and certain. For Husserl this absolute mark of certainty is absent, but that *something* is “self-given” for the mind to know by the data of the senses is not uncertain.



With this idea of “self-evidence” as a starting point, Husserl then describes “experience” in the following way:

The question concerning the character of objective self-evidence is thus a question concerning the self-evident givenness of individuals. And the self-evidence of individual objects makes up the concept of experience in the broadest sense. Experience in the first and most pregnant sense is accordingly defined as a direct relation to the individual. Hence those judgments which are *primarily in themselves* are, as judgments with individual substrates, judgments about individuals, judgments of experience. They are preceded by the self-evident givenness of individual objects of experience, i.e., their prepredicative givenness. . . The theory of prepredicative experience, of precisely that which gives in advance the most original substrates in objective self-evidence, is the proper first element of the phenomenological theory of judgment. . .

Consequently, the concept of experience must be understood so broadly that it comprehends not only the giving of individual existence itself, purely and simply, that is, the giving of something itself in the certainty of being, but also the modalization of this certainty, which can change into conjecture, probability, and the like. Moreover, it also includes experience in the mode of as-if, i.e., the givenness of the individual in phantasy, which in an appropriate way, always possible, free alteration of attitude turns into positional experience of a possible individual. . .

The concept of experience as the self-giving of individual objects was so broadly understood that not only did the self-giving of individual objects in the mode of simple certainty fall under it, but also modifications of this certainty, even those modifications of actual experience in the form of the as-if. Though all this is included equally in the concept of experience, yet experience which takes place in the certainty of being has a special designation. . . Objects are always present for us, pre-given in simple certainty, before we engage in any act of cognition. At its beginning, every cognitive activity presupposes these objects. They are there for us in simple certainty; this means that we presume them to exist and in such a way as to be accepted by all of us, and this in a variety of ways. Before the movement of cognition begins, we have "presumed objects," simply presumed in the certainty of belief. This certainty of belief continues until subsequent experience or the critical activity of cognition shakes it, modifies it to "not so, but otherwise," or even "possibly so," or even confirms the presumed object in its certainty as "really being so" and "truly existing." This "preliminary presence" means that the object affects us as entering into the background of our field of consciousness, or even that it is already in the foreground, possibly already grasped, but only afterward awakens "the interest in cognition," that interest which is distinguished from all other interests of practical life. But always this preliminary grasping is affection, which is not the affecting of an isolated particular object. "To affect" means to stand out from the environment, which is always copresent, to attract interest to oneself, possibly interest in cognition [HUSS2: 27-30].

For Husserl, then, “experience” is a broad term that, at its roots, is characterized by the “self-evidence” of the object “entering into the background” of one’s consciousness through affection of the thinking Subject in some manner or another such as to “attract the interest of cognition.” He asks only that “simple certainty” in the self-evidence of the existence of the individual object be possible. “Experience” seen in this way has more of the nature of being a *cause* of knowledge, while for Aristotle “experience” is something we obtain, i.e. has the nature of being an *effect*.

Now let us take our own look at “experience” from Kant’s Copernican perspective. We accept the admissibility of an external environment capable of affecting the Organized Being and, in its turn, being affected by the Organized Being. As Kant himself put it, “A transcendental

idealist is an empirical realist.” However, does this view justify Husserl’s idea of “self-evidence” – i.e. of the “self-givenness” of an object? If by this rather ambiguous description we mean self-evidence of a causal object *as* the causal agent, our verdict must be a negative one because to decide otherwise opens yet another crack through which the copy of reality hypothesis can slip in.

Simply hedging our bet by saying the self-evidence of the object may be “incomplete” or “inadequate” will not do unless the *objective validity* of the idea of the “self-givenness” of the object be established. And it is at this point where the weight of psychological evidence turns against Husserl. As Piaget has emphasized in [PIAG1], [PIAG2], and other of his works, there is no evidence at all that an infant in the first three stages of sensorimotor intelligence has the least awareness of external objects differentiated from his own activities. While something is no doubt “self-evident” to the infant, we have no reason to suppose any *objective* “self-givenness,” in the form of an *individual* causal agent, exists *from the viewpoint of the infant*.

As for Aristotle’s view, “from perception comes memory and from memory comes experience,” the fatal weakness in this is its overt assumption of the copy of reality hypothesis. In the Aristotelian view experience is a kind of knowledge “taught” to a person *by* the “real world” through “perceptions” of this real world.<sup>1</sup> This view would be a reasonable one *if* these “perceptions” were a copy of reality, but we have already seen that this hypothesis must be dismissed.

What Aristotle and Husserl seem to share in common is the presumption that the ‘real world’ acts as the ‘teacher of experience’ and the mind fills the role of its pupil. Put another way, both men view ‘experience’ in terms of a cause-and-effect relationship and they differ mainly in whether the word “experience” is to be used to denote the cause or the effect. However, if objects conform to cognitions rather than cognitions conforming to objects, is such a cause-and-effect view of ‘experience’ valid? No. That which we call Nature must be seen in terms of the idea of a ‘world model’ constructed by mental representations. If we try to maintain the idea of ‘experience’ in terms of a cause-and-effect relationship, the Copernican view of Nature would reverse the order, making the “real world” a product of mind. But *this* position is one of pure subjective idealism that *subordinates* the empirical view to rationalism. A transcendental idealist *could not also be* an empirical realist in such a case.

If we rid ourselves of the presumption that ‘experience’ must be viewed in cause-and-effect terms, we can find our way out of this dilemma. Experience, as the saying goes, may be our teacher, but it is also, always and at the same time, what is taught. To put this less poetically, if we examine our idea of this “thing” called experience, we always find two elements in its constitution. First, there is the *objective* element – the “what” the experience is *about*. Secondly,

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<sup>1</sup> This or similar views of experience are found in other empiricist theories as well.

there is the *subjective* element – the personal and private condition of *having* (in the sense of “grasping and possessing”) “the experience.” In every instance of that which we call experience, there is the factor of “that which is experienced” and the factor of the person who is “experiencing.” These two factors are always copresent simultaneously ‘in’ any experience and the relationship between them is one of reciprocity – each being regarded simultaneously as both the cause of the other *and* as the effect of the other. If we divide these elements, as agent (the causal) and patient (the affected), we destroy this relationship and, along with it, any meaning to the idea of ‘experience.’

In terms of our Organized Being model, the idea of ‘experience’ is one that spans this model from *nous* to *soma* and, if it is a “real world experience,” beyond into the environment. Something is an experience only if it encompasses all these factors of Organized Being, and we can draw no real division to separate them. In the most abstract sense, the *existence* of an experience is represented by an adaptation made to the totality of our ‘world model’ (i.e., our representation of Nature).

From this perspective, how shall we regard Kant’s *dictum*, “That all our knowledge begins with experience there can be no doubt”? First of all, the knowledge he refers to is *Erkenntnis* – the cognizance *of* an object. Such knowledge is the representation of the appearance of the object in an intuition *and* the *construction* of this representation through concepts. Second, such a representation – one whose construction involves concepts and not merely intuition alone – makes an ‘addition’ or a ‘modification’ to our world model (Nature). But it is precisely such an adaptation of the world model that is the hallmark of the existence of ‘experience.’ The idea of Nature is the Idea of a world model representing a unified whole (we speak of Nature in the singular), and unity in the representation of such is not given by intuitions for which no constructive concepts are attached. (“Intuitions without concepts are blind” [KANT1: 69 (B: 75)]). Thus, when we say our knowledge begins with experience, what we are saying is merely that when our representation is sufficiently developed to be contained “in” our world model, *ipso facto* the conditions are met wherein we can meaningfully speak of the existence of ‘experience.’ The knowledge of an object and the existence of an experience arise coincidentally with each other, and experience is thus one’s totality of knowledge of Objects via sensuous representations.

### The Necessity of *A Priori* Foundations of Experience

From all that has just been said regarding the terms knowledge and experience, we may distinguish between two different major ‘levels’ of knowledge. For the first level we can consider those representations that are objective, in the sense that they are representations of appearances, but in which their representing has not yet developed to the point of unifying the representation

with the manifold of representations that collectively comprise the Object we call Nature. In terms of the degree of objective content in such representations, these rise no further than Kant's 3rd degree of knowledge. Individually and collectively, these representations are logically prior to the attainment of experience. Consequently, such representations can be said to be *a priori* even though they originate through receptivity and their matter is empirical.

The second major level is that for which the objective representation is fully cognizant, that is, a representation in which concepts as well as an intuition are involved. In terms of the degree of objective content, such representations lie at the 4th level and above in Kant's classification. However crude and underdeveloped such a representation may be, it now contains connections into the manifold of concepts and a 'place' in the thinking Subject's world model. The representation has, in other words, fulfilled the conditions under which we say experience exists, and consequently is called a representation *a posteriori* – "after" experience is attained.

With the integration (i.e., the assimilation) of a representation into the developing mental construct of Nature, the appearance represented in intuition is, so to speak, richer and fuller for having its intuition contain contributions from concepts instead of merely being constructed out of the data of the senses via pure receptivity. Through the 4th and 5th degrees of objective content, the object of the appearance is to a corresponding degree determined by the concepts that help regulate the construction of its intuition. The object in this case<sup>2</sup> is called a *phenomenon* – an "object of experience."

That human beings develop from infancy (at the beginning of which response to stimuli takes place through innate reflexes in which we say that experience is *not* present), into beings who think in terms of a mentally-constructed world model is beyond doubt. Somewhere between birth and approximately two years of age, the *Dasein* of experience is manifested in behavior. We are therefore led to ask: what are the mental capabilities necessary for this to be possible? We need, in other words, to discover the functional invariants necessary for the possibility of experience.

Because we reject both the copy of reality hypothesis and the cause-and-effect explanation of experience, we must look for our answer in terms of mental *processes* capable of giving rise to representation in a manner that does not rely on or assume either of these failed hypotheses. Such processes must deal with the formulation of intuitions, the possibility of the construction of intuitions from the rules we call concepts, and the formulation of concepts. Inasmuch as the data

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<sup>2</sup> I will postpone discussion of the cases where the degree of objective content rises above the 5th degree in order to make sure that we first establish clearly what we are dealing with at the level of the phenomenon. A clear understanding of objects of experience is vital to an appreciation of knowledge at the 6th and 7th degrees of objective content. But, as a preview of things to come, let it be sufficient for now to merely say that beyond the 5th degree of objective content we encounter the Object as a *noumenon* - an Object of Reason.

of the senses, intuitions, and concepts are heterogeneous kinds of representations, and because these heterogeneous representations must nonetheless be somehow combined in some fashion to produce knowledge (*Erkenntnis*), these necessary mental processes must be processes of *synthesis*. Furthermore, these processes must provide the *real* grounds for the operations we have called by the name *Verstandes-Actus*. Kant identifies three such processes: 1) ***the synthesis of apprehension*** in the intuition; 2) ***the synthesis of re-production*** in imagination; and, 3) ***the synthesis of re-cognition*** in the concept:

If every individual representation were entirely foreign to the other, as it were isolated and separated from it, then there would never arise anything like cognition, which is a whole of compared and connected representations. If therefore I ascribe a synopsis to sense, because it contains a manifold in its intuition, a synthesis must always correspond to this, and receptivity<sup>3</sup> can make knowledge possible only if combined with spontaneity<sup>4</sup>. This is now the ground of a threefold synthesis, which is necessarily found in all cognition: that, namely, of the *apprehension* of representations as modifications of the mind in intuition; of the *reproduction* of them in imagination; and of their *recognition*<sup>5</sup> in the concept. Now these direct us toward three subjective sources of knowledge, which make possible even understanding and, through this, all experience as an empirical product of understanding [KANT1a: 227-228 (A: 97-98)].

### The Synthesis of Apprehension in the Intuition

Experience, as we said earlier, is an idea that spans the whole of the model of the Organized Being. Experiences of the non-mental ‘external world’ (that is, *soma* and the environment) always involve the representation of what we have been calling the data of the senses. The time has come where we must be more explicit about what is meant by this idea.

From a physiological perspective, the idea of “sensory data” is expressed in terms of the biophysical theory of the nervous system – neurons, synapses, activity patterns, brain functions, and so on. We find the term “sensory coding” used to describe the characteristics of nerve impulses “that represent various characteristics of the environment” [GOLD: 13]. However, this physical view is not what we have in mind (in this treatise) when we use the term “data of the senses.” Instead, we use “data of the senses” to refer to the phenomenon of the corporeal world of *soma* and the environment (acting through *soma*) coming to affect *nous*. In other words, our perspective is taken from the viewpoint of “mind” rather than “brain” in the so-called “mind-

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<sup>3</sup> Receptivity is the capacity for *nous* to be affected through *soma*. Kant, of course, did not describe receptivity in these terms but merely as a metaphysical premise that mind can be affected through the senses [KANT8: 41 (9: 36)]. Inasmuch as Kant's *Receptivität* is a "Germanized" term, it seems not unlikely that the term "receptivity" was suggested by Locke's frequently used phrasing of "ideas" which were "received by" this or that sense [e.g., LOCK: 127-131].

<sup>4</sup> Spontaneity refers to mind's ability to produce representations "spontaneously."

<sup>5</sup> *Rekognition*. This is another "Germanized" technical term Kant employs. It must therefore be interpreted as holding a technical connotation rather than as the common use of the word "recognition" (e.g., "he received recognition for his service" or, as a verb, "I recognize your voice").

body” problem. The distinction often drawn between these two aspects of mind-body duality was well-expressed by Goldstein’s description of a question put to him by one of his students:

A human perceives a stimulus (a sound, a taste, etc.). This is explained by the electrical impulses sent to the brain. This is so incomprehensible, so amazing. How can one electrical impulse be perceived as the taste of a sour lemon, another impulse as a jumble of brilliant blues and greens and reds, and still another as bitter, cold wind? Can our whole complex range of sensations be explained by just the electrical impulses stimulating the brain? How can all of these varied and very concrete sensations - the ranges of perceptions of heat and cold, colors, sounds, fragrances and odors, tastes - be merely and so abstractly explained by differing electrical impulses? [GOLD: 13-14]

We know a great deal about neurons, and even about the vast system of interconnected neural networks known as the central nervous system, from neuroscience. However, in all our biophysical theory we have not one iota of physical theory explaining the phenomenon of *perception*, inasmuch as nothing in our physical theory attempts to locate perception “in” any individual neuron. And if no neuron “perceives” it simply will not do to say that “perception” is an emergent property occurring when vast numbers of perceptionless neurons are interconnected.

That we do perceive, and that our perception *is* somehow tied up with the biophysical picture, is without doubt. However, “perception” as a phenomenon in the manner “clearer to us” must be considered from the perspective of mind – *nous* – and not merely from the perspective of *soma* alone. We call the ability of *nous* to be affected by the corporeal world its *receptivity*. The manner in which receptivity is *represented* we will call *sensibility*. Those representations of sensibility that stand in immediate relationship to “sensory coding” in the biophysical theory of *soma* we call the data of the senses. Thus, the idea of the data of the senses and the idea of sensory coding are *coordinate ideas* under the idea of the phenomenon of perception; the former is the *noetic* (mental) coordinate, the latter is the *somatic* coordinate.

Now this idea of the data of the senses has for its object only a totality of psychic relationships at a given moment and, consequently, its object could not even be called an appearance. The data of the senses must therefore be called pre-objective inasmuch as it is coordinate to the representation of a somatic representation of which we are not directly conscious. The brain, for example, does not perceive itself. We do not objectively “sense” the firing of neurons or the release of chemical transmitters. Neither are we conscious of this representation (i.e., the data of the senses) at a single moment in time. Instead, we are conscious of two separable classes of perceptions: the representation of a merely subjective affectivity and of an objective representation of an appearance – i.e., an intuition – in which a manifold of sense data is present. We may call the latter the manifold *in* the intuition. But since an intuition is a singular representation of *an* appearance, this representing has, in terms of the 2LAR of representation, the Quantity of *identification*.

Now in order for one-ness<sup>6</sup> of intuition to come from this manifold . . . it is necessary first to run through and then to take together this multiplicity<sup>7</sup>, which action I call the synthesis of apprehension<sup>8</sup> since it is aimed directly at the intuition, which to be sure provides a manifold but can never effect this as such, and indeed as contained in one representation, without the occurrence of such a synthesis [KANT1a: 229 (A: 99)].

Kant's contention is that this synthesis of apprehension is *necessary* for the *possibility* of experience – that without this synthesis, that which we call experience could not take place. It is this deduction we must now examine to see *why* the synthesis of apprehension is necessary *a priori*. Let us first look at what Kant had to say regarding the idea of experience.

Empirical representation combined with consciousness is perception. Consciousness of the combination of perceptions into a whole . . . is not, in turn, itself empirical, but *a priori* knowledge as to its form - that is, experience. This harmonization<sup>9</sup> is not derived *out of* (or *from*) experience, but is a synthesis of appearances in the Subject *for* experience, and for the sake of its possibility [KANT10: 107-108 (22: 321)].

*Experience* is absolute subjective unity of the manifold of sensible representations [KANT10: 196 (22: 97)].

The empirical knowledge of the Object of intuitions in its thoroughgoing determination is experience [KANT10: 196 (22: 98)].

Experience requires cognition that relates to appearances in their “thoroughgoing determination” – i.e. the mental combining of the representations of appearances into the representation of an object. It follows from this that we must first produce the representations of individual appearances before it will be possible to combine these representations into a representation of an object as a phenomenon.

Now is the synthesis of apprehension described above necessary to accomplish this? Our idea of sense data is the idea of a representation that stands in immediate relationship to a corporeal state of *soma*.<sup>10</sup> It is clear, even without Hume's criticism, that such a corporeal state is subjective (that is, pertains only to the thinking Subject) and could not possibly be taken as some copy of reality in the sense of being some kind of image of an object's appearance.

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<sup>6</sup> *Einheit*. This is usually translated into English as "unity."

<sup>7</sup> *Mannigfaltigkeit*.

<sup>8</sup> Kant used the phrase *die Synthesis der Apprehension* rather than the German *Auffassung* (apprehension). He uses this latter term when speaking of "apprehension" in more general terms. The phrase "synthesis of apprehension" must therefore be taken in the specific technical sense described here, i.e., as the combining of diverse representations as sensibility in the phenomenon of general apprehension.

<sup>9</sup> *Zusammenstimmung*, literally, "tuning together."

<sup>10</sup> That it is possible to have such a coordination between the mental "dimension" of representation (*nous*) and corporeal state (*soma*) is a fundamental principle of the *psyche* in the Organized Being model. It is important to remember that the division of the Organized Being along the lines of *nous* and *soma* is merely a *logical* division - a representation that allows us to talk about one of these aspects in terms appropriate to that aspect without subordinating these ideas to the theoretical ideas that describe the other.

If, on the other hand, the thinking Subject can combine a number of heterogeneous representations of the data of the senses (sensory modalities) into a single and unified representation, this representation is no longer the representation of *any* sensory modality since it will certainly contain ‘parts’ of the representations of some number of such sensory modalities yet might not contain *all* of any *one* sensory modality. If such a representation is not to be merely some arbitrary and meaningless aggregation, it must “center on” or “pertain to” what we can call ‘the unity *in* the representation.’ Such is that which we have called the appearance. But since it is *nous* that acts as the agent for this representing, it is also clear that we cannot ascribe the final *form* of this representation to the agency of any “outside” entity. The particular sensory modalities of the data of the senses do not make reference to such an outside entity, being entirely subjective. Therefore the combining of a plurality of such representations into a single representation (an empirical intuition) is the combining of elements (the representations of the data of the senses) that are to be regarded, in and of themselves, as diverse and heterogeneous. Consequently, the representing act is a synthesis.

Now the object of this synthetic representation is merely an appearance; it does not yet contain the degree of knowledge we hold as being necessary to rise to the level of the representation of a phenomenal object. Yet the representing of an intuition does perform the important task of cutting the representation loose from any *particular* sensory modality and it is this separation that makes it possible to represent *objectively*. Indeed, we could not even justify identifying the *soma* if it were not possible to produce representations as appearances divorced from the immediate sensory modalities, for if we could not do so all our representations would merely be representations of we-know-not-what and even the term “object” could have no meaning.

And so it is that we come to a choice. We may reject the hypothesis of the existence of the synthesis of apprehension in an intuition. If we do so, we are bound to solipsism for we can then have no objects but only vague and formless “sensations of being.” Or we can accept the hypothesis of the *Dasein* of the synthesis of apprehension, in which case objects *become thinkable*. Without this possibility, there could be no such thing as ‘experience.’ Given this choice, we choose the latter and elevate the hypothesis to the status of an axiomatic principle: ***The synthesis of apprehension in an intuition is necessary for the possibility of experience.***

### The Synthesis of Reproduction in Imagination

The synthesis of apprehension in an intuition is necessary for the possibility of experience, but this does not mean that this synthesis is *sufficient* for the possibility of experience. Among the by-products of experience we find connections between what we perceive *now* and what we have



perceived in the past, between what we have perceived in the past and what we anticipate for the future, specification of particular objects within a global perception, and so on. None of this, however, is present in an empirical intuition freshly produced by the synthesis of apprehension alone because such an intuition has its source, as described above, merely from the synthesis of the data of the senses. As a consequence, *if* mind can hold a multiplicity of intuitions there is nothing presented in our description of the synthesis of apprehension that necessarily provides for the connection of this multiplicity in a manifold *of* intuitions. If *an* intuition is, as we have described it, a singular representation of the unity in the manifold of sense data, then it is a self-contained representation requiring nothing else for its distinction.

However, it is clear that we do indeed appear capable of holding multiple intuitions. Hearing the sound of the word “cat” can summon up in our minds the visual image of the animal even though our acquisition of this visual representation may have long preceded any association with the sound of the word. And if the sound of the word and the image of the animal were originally formed nonconcurrently, the ability to associate the one with the other is a phenomenon that the synthesis of apprehension alone cannot explain.

It is of course merely an empirical law which says that representations that have often followed or accompanied each other finally become associated with each other, thus placed in connection in such a manner that, even in the absence of their object, the one representation brings about a transition in the mind to the other [representation] according to a fixed rule. However, this law of reproduction presupposes that appearances themselves are actually subject to such a rule and that there occurs an accompaniment or sequence in the manifold of the representations in conformity with certain rules . . . If cinnabar were sometimes red, sometimes black, sometimes light, sometimes heavy, if human beings changed sometimes into this, sometimes into another animal shape, if on the longest day the country were one moment covered with fruit, the next moment with ice and snow, then my empirical imagination would not even have the opportunity to think of heavy cinnabar in connection with the representation of the color red . . .

There must, therefore, be something which, by serving as the *a priori* ground for a necessary synthetic unity of appearances, makes possible the reproduction of appearances. We may soon discover what this is if we bear in mind that appearances are not things-in-themselves but the mere play of our representations, which in the end amount to determinations of inner sense. Now, if we are able to demonstrate that even our most pure *a priori* intuitions can provide knowledge only in so far as they contain such a combination of the manifold as serves to make possible a pervasive synthesis of reproduction, we shall equally have provided a principle for this synthesis of imagination prior to all experience, and thus must accept it as a pure transcendental synthesis of imagination which (since it is necessarily presupposed in the reproducibility of appearances) serves as the ground for the possibility of all experience. [KANT1: 123 (A: 100-102)].

How shall we view this idea of a manifold *of* intuitions, and how shall we view this manifold relative to the idea of *an* intuition that incorporates these separate representations into *one* unified representation? Let us explore some of the logical possibilities.

The first possibility is that a manifold of intuitions might be “held in the mind” in some immediate fashion so that during the synthesis of apprehension what is produced is not a new

intuition but, rather, is merely the enlargement of an intuition already present. In this picture, no intuition *per se* is ever complete but, rather, is always in a kind of state of being refined. Such an idea is, so far, not in conflict with the idea of a continuing accommodation of intuition which leads to the assimilation of the succession of the data of the senses into one “ever-growing” intuition.

This logical idea does, however, seem to present an important self-contradiction. We employ the word “intuition” as the name of a *singular* representation of an appearance. If we view the representing process as described above, how then are we to account for the particular within the general? For instance, how am I to separate the representation of “my dog” from the general idea of “dogs”? *The objects of these representations are not the same* even though they are clearly related in some way. And if the intuition of “dogs” is kept separate from the intuition of “my dog” – so that individuality of their objects can be maintained – how am I to form any connection between “my dog” and “dogs” under the presumption of this “growth model” of the synthesis of apprehension? The ideas of individuality and generality are *facts of experience*, and the model described above seems to run contrary to these facts.

There is another logical model we can next examine. Perhaps intuitions are indeed held immediately in mind, but that it is possible to “copy” a part of an already present intuition into the production of a new intuition during the synthesis of apprehension. In this case, the “original” intuition is conserved during the production of the newer intuition and the possibility of individuality is therefore maintained. In this model we are led to presuppose a *new* process – that of copying a part of an existing intuition – and we can even call this process “reproduction” of an intuition. Seen in this way “reproduction” is not a synthesis but, rather, an *analysis*, the outcome of which can then be used *by* the synthesis of apprehension. If, however, we adopt this view, how are we to account for the subsumption of the particular *under the general* or even to account for the existence of the “general” representation itself? We would have to presume a synthesis of two or more intuitions to produce the intuition of the “general” appearance, *but such a synthesis could not be the synthesis of apprehension*, which takes its material from the data of the senses. Nor would the representation coming out of such a synthesis have *immediate* reference to the data of the senses, for the representation of the general is an *idea* and its object is supersensible – a *noumenon*. I can sensibly perceive a dog, or even a pack of dogs, but I never have a direct perception through outer sense of something called “dogs-in-general.” Therefore this second model necessarily presupposes *some* second kind of synthesis, distinct from the synthesis of apprehension in an intuition.

We must concede the existence of some second kind of synthesis as necessary for the possibility of experiences reflected in representations of the general. The question therefore moves from a question of the *Dasein* of a second synthetic process to the question of *what kind of*

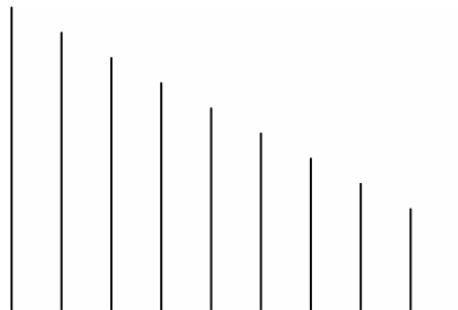
synthetic process. In exploring this facet of the question, we now must challenge the idea that this process draws its material from intuitions held “immediately” in mind. Here we find an important *empirical* contradiction with the phenomenon of *memory*.

Let us suppose that intuitions are held immediately in mind and that I am shown an arrangement of sticks of differing sizes as depicted in Figure 3.6.1. I am allowed to look at this arrangement as long as I like; afterwards, I am not allowed to see this arrangement again. Now suppose I am asked to draw what I saw one hour later, that I am asked again to draw it one week later, and, finally, that I am asked to redraw it six months later. What should happen?

If the intuition of this appearance is held immediately in mind, I should be able to reproduce at least an approximation of this figure in my drawing (allowing that I might not perfectly represent this appearance in intuition in the first place). Afterwards, I should either always reproduce the same drawing or, if the representation of the appearance “degenerates” due to forgetfulness, reproduce a progressively inferior drawing over time. In no case should I produce a drawing after one hour that is inferior in the correctness of its details to a drawing I produce a week or six months later *if it is the intuition that is held immediately in mind*.

Now what *in fact* actually happens? Numerous psychologists, including Piaget and his coworkers, have carried out precisely this experiment on groups of children of differing ages. The outcome of Piaget’s experiment is described in detail in [PIAG21: 29-49], but it will suffice for our present discussion to quote his summary of this research:

The first interesting result of this experiment concerns what we find after one week. We find that what the subject retains is not the perceptual model as such, but the way in which he assimilated it to his operational schemes, in terms of the operational level of each individual subject. The youngest (3-4 years) remember a form we call *a*, which consists of a certain number of sticks lined up, but all the same length |||||. Slightly older, (4-5 years) remember the model in a form we shall call *b*, in which there are big sticks and small sticks, but only two sizes; they are presented either as repeated couples ||||| or as a dichotomous series: |||||. A slightly more advanced level presents triplets . . . we shall call this form *c*. Five-to six year- olds generally attain form *d*, which is a small series of four or five elements. Finally, around 6 or 7 years of age, we find the form we shall call *e*, which is a series like the original one, with about 10 elements.



**Figure 3.6.1** Arrangement of 10 Sticks Used in Memory Experiments

Now after six months all the subjects from 3 to 8 years claimed that they remembered very well what we had shown them. But interestingly enough, they generally did not give the same drawing or description. There was not one instance of deterioration in the memory in this experiment (although there were such instances in other experiments which we shall see later); on the contrary 74% of the subjects had a *better* recollection now than they had after one week. The progress did not take the form of big leaps: we rarely saw a transition from *a*, or *b* to *e*. Usually we found an improvement from one level to the next: from equalities (*a*) to dichotomies (*b*), or from dichotomies to trichotomies (*c*), or from trichotomies to little series (*d*).

The interpretation which seems to be called for is the following. First of all, a memory-image is not simply the prolongation of the perception of the model. On the contrary, it seems to act in a symbolic manner so as to reflect the subject's assimilation "schèmes", that is, the way in which he *understood* the model (I say "understood", and not "copied", which is an entirely different thing). Now in six months, in the case of seriation or ordering, such as we have in this experiment, this operational or preoperational scheme of assimilation evolves, as the child has continued to compare objects of different sizes, etc., outside and well beyond the experiment we presented to him. Then the new scheme at the next level serves as the code for decoding the original memory. The final memory, then, is indeed a decoding, but it is the decoding of a code which has changed, which is better structured than it was before, and which gives rise to a new image which symbolizes the current state of the operational scheme, and not what it was at the time when the encoding was done [PIAG4: 3-5].

The results of this experiment are so at odds with what would be expected on the basis of the assumption that the original representation of the appearance is held immediately in memory as to compel us to reject this hypothesis. The re-presenting of a previous appearance is, indeed, the re-presentation of an intuition (since it is an appearance re-presented), but *not the original intuition*. The psychologists' use of the terms "coding" and "decoding" summon up the hypothesis of an act of *reconstruction*, not "recollection" of an old image stored somehow intact. Note further that Piaget attributes the surprising outcome that the children's memories of the stick model *improved* over time to the fact that, over an interval of six months, the children had gained additional *experience* in comparing and judging objects and that the result of this greater experience was a higher level of sophistication in the structure of the image they reproduced.

Such a radical change in a mental structure calls for a process that should be named *imagination* rather than recollection. It is furthermore clear that this process of reproduction in imagination is a process that involves *synthesis* since diversity of experiences appears to be a critical part of the child's memory development. And if it is not simply a previous intuition being "recalled to mind" that is at work here, the synthesis of reproduction in imagination must be predicated upon *rules* for this reconstruction – i.e., on *concepts*.

So it is that we are led to the following conclusion. To progress from the representation of an undetermined object of appearance to a representation of the appearance of a *determined* object of experience, there must necessarily exist a second kind of synthesis. This synthesis does not require previous intuitions held immediately in memory but, rather, merely the capability to produce *an intuition in the absence of any direct affectation of sensory perception by its object*. Inasmuch as the idea of experience requires the uniting of the manifold *of* intuitions, the intuition

produced in this process must, in some fashion, be the *reproduction* of a previous intuition or *some portion thereof*. This reproduction need not be either an *exact* duplication of a previous intuition, nor even necessarily a *complete* duplication of that previous intuition. (Indeed, Piaget's experiments strongly imply that neither exact nor complete replication necessarily takes place *in fact*). But, in this case, we no longer require the *analytic* process of copying part of an existing and immediately present intuition since the function this assumption served can be equally well carried out by this synthesis of reproduction in imagination.

Now, the mere fact that we might suppose this synthesis *could* replace the previously proposed analytic process does not establish that the synthesis of reproduction *does* replace the analytic process. Have we any stronger ground for making the hypothesis that it does so in fact? Kant said that we do:

Now it is apparent that when I draw a line in thought, or think the interval from one noon to the next, or even represent a particular number to myself, I must first of all necessarily grasp these manifold representations one after another in thought. But if in thinking I were to lose sight of the preceding representations (the first part of the line, the preceding parts of the time interval, or the sequentially represented units) and were to move on to the next without reproducing the previous ones, then a whole of representation could never arise, including all the mentioned thoughts and even the most pure and elementary representations of space and time.

The synthesis of apprehension is, therefore, inseparably combined with the synthesis of reproduction. And as the former is the transcendental ground for the possibility of all knowledge (not only empirical knowledge but also pure *a priori* knowledge), the reproductive synthesis of imagination belongs to the transcendental acts of mind, and in regard of this we will call this capacity the transcendental capacity of imagination [KANT1: 123-124 (A: 102)].

Let us recall James' "stream of thought" idea: Thought, he said, was *sensibly continuous*. In the quote given above Kant is saying something very similar, namely that in the production of cognition (i.e., in the *Erkenntnis* of experience) we find a "grasping" or "holding together" of the manifold in the representation of appearances. This must take place even after a preceding affectation of the senses has passed by and is, so to speak, only a memory. The synthesis of reproduction in imagination runs not only concurrently with the synthesis of apprehension, but in *mutual interaction* with it. Although we can speak of these two separately, these synthetic processes are merely *logically distinct* but are mutually *coordinate* in a single power of representing – the aforementioned representation of sensibility.

If we now say that the synthesis of reproduction first produces a distinct intuition *and then* that intuition is cut into "pieces" by some analytic process, so that a "piece" of the reproduction may be employed in the synthesis of apprehension, we subordinate apprehension to reproduction. In such a case, *what determines which "piece" of the reproduction is suitable for the apprehension?* We can also turn this question around: if apprehension waits on reproduction, *what determines which of the manifold of possible reproductions is the one suited for an apprehension that has not yet taken place?* To even attempt to answer either question is as much

as to say that either something in the object is capable of forcing cognition into agreement with it (which is a repudiation of the Copernican hypothesis) *or* that something that had occurred in the perhaps distant past affects the perception of the immediate data of the senses independently of the data of the senses.

What we have here is none other than the “cause and effect” view of experience attempting to re-assert itself. This view, however, we have already adequately dispensed with. On the other hand, if apprehension and reproduction work in reciprocity with each other, no such “cause and effect” difficulty arises since each process both determines and is determined by the other. Therefore, we reject the idea of a separate analytic process since it necessarily re-imposes upon us the cause and effect hypothesis of experience. This leaves us with two more acroamatic principles: 1) *the synthesis of reproduction is necessary for the possibility of experience*; 2) *the synthesis of apprehension and the synthesis of reproduction work in a relationship of complete reciprocity with each other.*

### The Synthesis of Re-Cognition in a Concept

The synthesis of reproduction in imagination we have just discussed obviously presupposes, as a condition of reproducing rather than merely recalling an intuition, the existence of rules for this reproduction. Since the intuitions so reproduced are empirical – i.e., they are representations of empirical appearances – it is equally clear that these rules must also be empirical. It therefore follows that these rules must have been the products of a synthesis since a rule for constructing an intuition through imagination is a representation quite different from the intuition itself. To this type of representation we have previously given the name *concept*.

There are two questions that present themselves immediately regarding this idea of the synthesis of re-cognition in a concept. The most obvious one is: what justifies the name “concept” for this second type of representation? This question is bound up with the second: why is this type of synthesis necessary for the possibility of experience?

Every sort of representation is the representation *of* something, which we call the object of the representation. In its turn, a representation may itself serve as the object of some *other* representation, e.g. intuitions are the objects of concepts. This forewarns us that representation and object are not crisply divisible in ontology. As we have already said, the object of an intuition is an appearance. Now, the *idea* of ‘appearance’ is itself a conceptual representation, the context of which is found in a higher idea of what we will designate with the term **Object**. An Object is a *noumenon*. It is regarded as being *both* what the appearance is the appearance *of* (the object) *and also* the *representation* of the object. This is a sublimely subtle factor in Kant’s theory. Let us examine this idea of the Object (in modern German, *Objekt*) more closely.

That we name the object of an intuition an appearance is grounded in a principle that the world external to that aspect of the Organized Being we call *nous* has actual existence (*Dasein*) and that this physical world stands in a Relation of community – i.e., reciprocity of causality and dependency – with *nous*. The *capacity* for *nous* to be affected by this physical world is called the *receptivity* of *nous*, and the form of the effect produced is a mental representation. The sensuous *representation* of how the Organized Being is affected is called sensibility.

Because we must hold the copy of reality hypothesis as false (inconsistent with observable phenomena), the immediate representation of sensibility in intuition must be viewed as an effect produced through receptivity and not as a direct representation of the thing in the physical world which stands as the agent of the sensible effect. Thus intuitions are representations merely of an appearance and not of the thing-in-itself<sup>1</sup> that stands as ground for the appearance. We have no representation of the *Existenz* of the thing-in-itself other than representations of its appearances. The thing is called the transcendental object of its appearances.

The *practical* idea of an Object is important because the word “appearance” does not require the connotation of a “real thing.” Rather, “appearance” often carries a connotation in casual conversation more akin to “illusion” – e.g., “it only *appears* to be so.” We have seen that the representation of an appearance (intuition) is an outcome of a representing act *of the Subject* and, under the Copernican hypothesis, objects conform to our representations rather than our representations conforming to objects. This postulate is the cornerstone of epistemology in the Critical Philosophy and our only solution to Hume’s skeptical critique of philosophy. Yet it seems to be a fact that all of us<sup>2</sup> perceive the external “commonsense” world in much the same way – an objective space of three dimensions, an objective time that relentlessly confronts us with past, present, and future, a universe of “substantive” and “individual” extended (corporeal) bodies, a world in which events seem to follow cause-and-effect relationships, and so on. That objects should conform to one’s personal representations and yet all normal individuals should perceive the same objects in more or less the same way seems to be nothing short of incredible. Thus we are bound to ask the question: How can this be? What is the explanation for this phenomenon of common experience?

To address this question let us begin by pointing out that this phenomenon of common experience is, strictly speaking, not really a fact. Very young children do *not* in fact perceive the world in the same way adults do. For example, before approximately the age of eight to twelve months, the child does not perceive “substantive objects” to be *permanent*. For the infant things

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<sup>1</sup> Kant’s term is *Ding an sich*, which is literally “thing in itself,” but the flavor of this term is perhaps better appreciated in English by using the colloquialism “thingamajig.”

<sup>2</sup> With, of course, the exception of persons who are said to be psychotic, or under the influence of “mind-altering” drugs, or who are otherwise regarded as mentally “abnormal.”

appear to come into being and to vanish from existence more or less capriciously. As an illustration of this, let us consider the following observations by Piaget:

OBS. 24. No object is more interesting to the child at this stage<sup>3</sup> than his bottle (Jacqueline and Laurent were weaned about 0;6<sup>4</sup> and were almost exclusively bottle-fed until about 1;0). It is therefore permissible to consider the child's reactions toward it as typical and as characterizing the whole of this stage.

Until about 0;9 (4) Laurent, in whose case particularly I analyzed this phenomenon, manifested three distinct reactions, the sum of which clarifies the three preceding observations and permits an inference free of ambiguity.

1. If the bottle disappears from his perceptual field this is enough to make it cease to exist from the child's point of view. At 0;6 (19), for instance, Laurent immediately begins to cry from hunger and impatience on seeing his bottle (he was already whimpering, as he does quite regularly at mealtime). But at the very moment when I make the bottle disappear behind my hand or under the table - he follows me with his eyes - he stops crying. As soon as the object reappears, a new outburst of desire; then flat calm after it disappears. I repeat the experiment four more times; the result is constant until poor Laurent, beginning to think the joke bad, becomes violently angry.

This behavior pattern is conserved with the same definiteness until about 0;9. Hence it seems apparent that to the child the objective existence of the bottle is subordinate to his perception. This does not mean, of course, that the vanished bottle has been fundamentally forgotten; the child's ultimate rage reveals clearly enough that he believes he can count on the object. But this is precisely because he considers it as being at the disposal of his desires . . . and not as having substantial existence under my hand or under the table. Otherwise he would manifest, at that exact moment, a still more intense desire than during normal perception. That is clearly revealed by the following reaction.

2. When I make only part of the bottle disappear and Laurent sees a small fraction of it near my hand, or a cloth, or the table, the manifestations of his desire are more imperious than when he saw the whole bottle. At the very least they remain identical: Laurent kicks and cries while staring fixedly at the visible portion of the object. . .

Finally, let us note in connection with this second reaction that Laurent recognizes his bottle no matter what part of it is visible. If he sees the nipple, his reaction is natural, but even when he sees the wrong end his desire is the same; hence he admits at least the virtual entirety of the bottle . . . But, as will be revealed by the third reaction which illuminates the meaning of the first two, this wholeness is considered by the child as only virtual. Everything occurs as though the child believed that the object is alternately made and unmade; if, independently of any screen, the bottle is presented to Laurent upside down he will consider it incomplete and lacking a nipple, at the same time expecting the nipple to appear sooner or later in one way or another. . .

3. . . . From 0;7 (0) until 0;9 (4) Laurent is subjected to a series of tests, either before the meal or at any other time, to see if he can turn the bottle over and find the nipple when he does not see it. The experiment yields absolutely consistent results; if Laurent sees the nipple he brings it to his mouth, but if he does not see it he makes no attempt to turn the bottle over. The object, therefore, has no reverse side or, to put it differently, it is not three dimensional. Nevertheless, Laurent expects to see the nipple appear and evidently in this hope he assiduously sucks the wrong end of the bottle . . . It is in this sense that we speak of the virtual totality from the point of view of object concepts; to Laurent the bottle is already a whole, but its various elements are still conceived as being at his disposal and not as remaining organized in space [PIAG2: 30-32].

Nothing confirms in a more striking fashion the validity of the Copernican hypothesis than observations such as this one. Piaget painstakingly documents the long, slow evolution of the object concept (and other "concepts of reality") during the child's development (see [PIAG2],

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<sup>3</sup> Stage III of the sensorimotor intelligence phase, from about 4 to 8 months of age.

<sup>4</sup> Piaget's notation for the age of the child is: years; months (days). 0;6 is six months of age.



[PIAG5], [PIAG6], [PIAG8], and [PIAG9]). From observations such as these, one striking and vital factor becomes evident, a factor that lies at the very root of the possibility of experience itself. This factor is the mental connection made between the manifold of appearances (represented in empirical intuition) and the *meaning* of these appearances invested in a transcendental object as the functional unity of these appearances.

Representation in intuition contains no reference to a transcendental object since the direct object of intuition is rooted in the data of the senses. Yet nevertheless such a reference to the transcendental object is seen to eventually emerge out of the manifold of appearances, first as Piaget's "virtual object" and later as the familiar "substantive object" we understand before reaching adulthood. Such a gradual evolution of objective perception stands in direct contradiction to the idea that our perceptions conform to the object and in brilliant support of the idea that our objects conform to our representations *and evolve as these representations evolve*. That the so-called "common sense" experience<sup>5</sup>, characteristic of human beings generally, is an empirical fact is not a phenomenon that must be attributed to objects; rather, it is a phenomenon that is better explained (in view of the empirical evidence) by the fact that all human beings are biologically more or less the same and the Piagetian hypothesis that this "genetic" commonness is matched by a coordinate commonness in our *mental functions*.

But since the transcendental object cannot be immediately given to us by the data of the senses, and since it is equally clear that a connection between the manifold of appearances and the idea of the transcendental object is necessary for the possibility of experience in the way human beings know experience, this raises the vital question: How is such a connection between the manifold of appearances and the object possible? Put another way, what is the *ground* for *object cognition*? To answer this question, we must examine more closely the idea of the Object from the viewpoint of the Copernican hypothesis.

First we must rid ourselves completely of the stubborn habit of thinking of the transcendental object as a thing that plays *any determining role* in the actual representing of a corporeal object. An object is *determined*, not *determining*. An *Object* is a kind of "place-maker" *organization* of the structure in cognition that serves as a unifying context. The principle of the Object-in-general is one acknowledging that the ideas of an environment and a *soma* are admissible under the Copernican hypothesis.<sup>6</sup> This is merely the principle that Nature has content, i.e. that empirical cognition represents something having real *Dasein* in Nature. The Object has no further implication beyond this *practical and ontological role* in thinking.

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<sup>5</sup> Kant rightly objected to the phrase "common sense" as used in this context; he argued that what this term attempts to describe should properly be called "common understanding" [KANT5a: 160 (5: 293)].

<sup>6</sup> This admission is implicit in the statement "objects conform to our representations."

And here then it is necessary to make understood what is meant by my expression "an object of representations." We have said above that appearances themselves are nothing but sensuous conceptions<sup>7</sup>, which must not be regarded in themselves in the same way as objects (outside the power of representation). What does one mean, then, if one speaks of an object corresponding to, and therefore also distinct from, one's knowledge? It is easy to see that this object must be thought of only as something in general = X, since outside our cognition we have nothing that we could set over against this knowledge as corresponding to it [KANT1a: 231 (A: 104)].

Now, while the Object has no role in the *act of representing an appearance*, it *does* signify something quite vital to the possibility of experience. Representations could never become knowledge if they were haphazardly constructed and without something that *necessarily* binds them to objects. Under the Copernican hypothesis the Object is this necessary "binding element" through which the connection of a manifold can be *unified* and *meaningful*, and not be merely a meaningless aggregation.

Without consciousness that what we are thinking at this moment is precisely what we were thinking a moment ago, all reproduction in the series of representations would be in vain. The representation in my present state would be new and would not belong to the act which was meant gradually to create it and the manifold of the representation would never form a whole, since it would be lacking in the one-ness that only consciousness can provide. If while counting I were to forget that the units I am at this moment imagining were gradually added together by me, then I would not through this successive addition of one to one produce the set, hence not know the number; for the idea [of number] consists solely of the consciousness of the one-ness of a synthesis [KANT1: 124 (A: 103)].

If representation in a concept (a rule for constructing intuitions) were merely a matter of, say, copying some internal sequence of sensorimotor sensations (or, in more Piaget-like terms, somehow storing a link to a particular motoregulatory sequence of reflexes) for use later in imagination, this representing act would be nothing more than an *analytic* representation, no different in principle from writing down the recipe while preparing some new food dish. In such an act we find nothing that grounds any necessity for the reciprocal actions of the synthesis of apprehension and the synthesis of reproduction to work in just *this* way rather than *that* way. Baby Laurent could not recognize his bottle when Piaget hid all but a small portion of it from him, nor expect the nipple to re-appear when he sucks on the wrong end of the bottle. There would be, in other words, no possibility of even Piaget's "virtual object," much less the eventual development of the idea of a substantive object. Concepts are not *merely* rules for the construction of intuitions; they are rules that carry the weight of *necessity* in the *form* in which this construction is to take place. Necessity, however, can never come from that which is of

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<sup>7</sup> In the original German text: *daß Erscheinungen selbst nichts als sinnliche Vorstellungen sind*. Translating *Vorstellungen* as "representations" rather than "conceptions" (not to be equated with "concepts"), as is usually done in the standard English translations of *Kritik der reinen Vernunft*, is quite wrong in this passage since such a rendering makes Kant contradict his own explanation of "appearances" (*Erscheinungen*). In my opinion, Kant did not use *Vorstellungen* as a "technical" term in this sentence, but only in a normal, conversational fashion, similar to a non-technical use of the word "ideas."

merely *contingent* origin.

Every necessity has a transcendental condition as its ground. A transcendental ground must therefore be found for the unity of the consciousness in the synthesis of the manifold of all our intuitions, hence also of the concepts of Objects in general, consequently also of all objects of experience, without which it would be impossible to think of any object for our intuitions; for this is nothing more than the something for which the concept expresses such a necessity of synthesis.

Now no cognitions, no connection and unity among them, can occur in us without that unity of consciousness that precedes all data of the intuitions and bound up in which all representation of objects is alone possible. This pure, original, unchanging consciousness I will now name *transcendental apperception*. . . The numerical unity of this apperception therefore grounds all concepts *a priori* . . .

[This] transcendental unity of apperception . . . makes, out of all possible appearances that can ever come together in one experience, a context of all these representations in accordance with laws. For this unity of consciousness would be impossible if in the cognition of the manifold the mind could not become conscious of the identity of the function by means of which this manifold is synthetically combined into one cognition [KANT1a: 232-233 (A: 106-108)].

Kant's transcendental apperception is an idea that we must take care not to confuse with the idea of "self-awareness" or "self-consciousness." He called the consciousness of oneself (i.e., when I represent myself to myself as an object among objects) by the name *empirical apperception* [KANT1a: 232 (A: 107)]. The idea of transcendental apperception is an idea that does indeed involve awareness, but only awareness in the most general and amorphous sense of the word – not an awareness of *Existenz* but merely an awareness of *Dasein*.<sup>8</sup> We will call the capacity for empirical consciousness *pure consciousness*.

That each of us does in fact possess such an awareness of our own *Dasein* is beyond any reasonable doubt. That this awareness is *innate* and present in each of us at least from birth is an assumption, for we cannot remember our own infancy and we cannot question infants, but the observation of the behavior of newborn infants seems to place the validity of this assumption beyond all *reasonable* doubt [PIAG1]. We will take up the discussion of the faculty of pure consciousness in Chapter 5. Our task at present is to understand how transcendental apperception provides the ground for the Copernican idea of the Object.

If we step back to "that which is clearer to us" for a moment, we can readily see that what we mean by the object of a cognition is something in which all our ideas, impressions, representations, and so on are brought together. The object, in other words, is a unity of all the concepts concerning it. Now let us look at the Object in these terms. The Object unites all the representations standing under it with the object. But within the borders of *nous* we can speak of nothing except representations. If the Object is to be related to *nous* in general, it follows that the

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<sup>8</sup> *Self-consciousness* (empirical apperception) is an awareness *and* a cognition of both *Dasein* and *Existenz*.

meaning in this idea can be found only in a representation *or in some global property of the act of representing*.

Now, as we have seen above, the object of a cognition is, for us, merely Kant's = X, for "we have nothing that we could set against this cognition which corresponds to it." The Object, which is a unity of the object *and* its representations, can therefore not be a representation in the cognitive sense of that word. It follows, then, that the Object is related to *nous* as a general and necessary ***schema for organizing cognition***. If we now add to this idea the other requirement – that any object be the unification of all the concepts pertaining to it – we can identify this schema as *the formal unity of consciousness in the synthesis of the manifold of representations*. This necessary one-ness is the object of the synthesis of re-cognition in a concept. And since necessity cannot be given empirically but, rather, always requires an *a priori* synthesis, we can also conclude from this that the synthesis of re-cognition in a concept is indeed a *necessary synthesis* of representations and not merely an analytical re-presentation of them.

We said earlier in this chapter that concepts, as empirical rules for the reproduction of intuitions, are themselves constructed representations and that such a construction necessarily presupposes the existence of *rules for the construction of these rules*. Given transcendental apperception as a ground, and building on this ground our new-found Copernican explanation of the Object, we are also in a position to state the fundamental acroamatic principle of transcendental apperception: ***All perceptions belong to the single consciousness of the Subject and therefore must be capable of being combined in a necessary unity of the manifold of representations***.

The necessity of this principle follows from the idea of transcendental apperception. The awareness of *Dasein* is a vague yet *global* awareness. The thinking Subject has but one *nous* by which this awareness can be represented in consciousness. At the same time, the simple awareness of the Subject's *Dasein* can only be a *singular* awareness since, if it were possible to have a plurality of "awarenesses" in one *nous*, such a plurality (by virtue of being in relationship to *nous*) would have to include awareness of different awarenesses – i.e., awareness as *Existenz* as well as *Dasein*. This, however, contradicts the thinking Nature of transcendental apperception. Consequently, the representation of transcendental apperception is a *single* consciousness.<sup>9</sup> It follows at once that all perceptions must therefore be capable of being united in one general unity of consciousness.

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<sup>9</sup> We will later deal with various psychological phenomena such as the phenomena of hysterical neurosis and those pertaining to 'split brain' effects in epilepsy patients. We will find that these phenomena are tied to empirical consciousness but do not implicate multiplicity in pure consciousness. For example, hysterical neurosis only implicates the absence of connections among concepts in the manifold of cognition and not multiple "faculties of consciousness." It therefore does not constitute an example contradicting the principle of formal unity of consciousness.

Let us summarize this lengthy discussion. We have seen that *the synthesis of re-cognition in a concept is necessary for the possibility of experience* because without it there could be no necessity in the synthesis of reproduction in imagination which, in turn, produces the unity of the manifold of intuitions (the putting together of various representations of appearances) that gives us the cognition of an object. The grounds of necessity for this unification come by way of the concepts (rules for the reproduction of intuitions), but the transcendental ground for all of this is the transcendental apperception. The Object is merely the necessary schema of the organization of representations under the acroamatic principle of the formal unity of consciousness in the synthesis of a manifold of representations. This principle rests, in turn, on the fundamental principle of transcendental apperception stated above, which also governs the notions (pure rules *a priori*) that determine how concepts are to be represented.

We are now in a position to appreciate why the representation of the empirical rules for the reconstruction of intuitions are called *concepts*. Our normal usage of this word, out of the Copernican context, is defined in the dictionary as “a generalized idea of a class of objects.” With appropriate re-phrasing to fit within the Copernican perspective, we see that our technical term “concept” plays this same practical role. Intuition combined with concepts produces the representative structure we call a *cognition*, and this structure is organized as an Object and thus can be appropriately called empirical *knowledge*.

## § 7. The Ideas of Representation in Epitome

In this chapter we have introduced a number of ideas concerning its main topic. A brief pause to look back therefore seems to be in order. Our main topic has been the idea of mental representation under the Kantian epistemology. How does this perspective differ from the “representationalism” of Locke? As we discussed briefly in Chapter 1, Locke’s view of “ideas” held that ideas were representations *impressed upon* the mind by external objects, that “ideas” were a copy of reality determined by the things that caused them. Kant, on the other hand, rejects the copy of reality hypothesis. In the Copernican perspective objects conform to our representations. This is not to be construed as meaning that mind somehow “creates external reality” in a *material* sense but, rather, that mind constructs our empirical knowledge of the world. Nature “appears the way it does” because Nature is the “world model” resulting from the mental operations of that logical division of Organized Being we have called *nous*. Viewed in this technical sense, Nature is the representation whose object is “everything” (“the World” or, if one prefers, “the Universe”). The Kantian theory does not deny physical matter to the “external world” (such a denial is not transcendental idealism but, rather, subjective idealism), but, so far as mind is capable of knowing, physical matter is regarded as being that in the object which we

correlate with the phenomenon of sensation (as cause to effect).

The effect of an object on the faculty of representation, insofar as we are affected by it, is sensation. That intuition which refers to the object through sensation is called empirical. The undetermined object of an empirical intuition is called appearance.

I call that in the appearance which corresponds to sensation its matter, but that which allows the manifold of appearance to be intuited as ordered in certain relationships I call the form of appearance [KANT1a: 155-156 (B: 34)].

It is said by some writers that “Kant was no representationalist.” This, I hold, is not correct. What should be said is that Kant’s representationalism differs from the copy of reality representationalism of Locke<sup>1</sup> and the subjective-idealist representationalism of Malebranche<sup>2</sup>. If we are willing to admit the validity of the idea of “mind” and that, furthermore, mind “does something,” the object of mind’s activity is representation. We may say that *soma* “presents” and that “what it presents” has a mental coordinate we call the data of the senses, but that *nous* “adds to” and “re-presents” this data in other forms.

One common objection to a theory of mind that involves “representation” is the old problem of mind-body duality. This problem arises if we view mind and body as “substantially” different (the former being some sort of “immaterial substance” – such as a soul – and the latter being “material substance”). The problem rose to prominence with Descartes, and is often criticized as requiring the necessity of a homunculus or “little man in the head.” This, however, is a false issue. Both “mind” and “body” under the Copernican hypothesis are objects. If we hold that the division of mind and body is a *real* division – i.e., that they are “substantially” different – then we have a mind-body problem. However, our Organized Being model is an idea under which the phenomenon we each call *myself* is only *logically* differentiated into different aspects – *nous*, *soma*, and *psyche* – for the purposes of discourse. Because this division is merely logical, we must not lose sight of the coordinate unity of *nous*, *soma*, and *psyche* and the real relationship of reciprocity that binds them as a unity, each represented as acting reciprocally as both cause and effect in relation to the others.

The idea of a representation is primitive inasmuch as we can only explain representation by making a representation. The idea of representation-in-general we have represented in terms of a 1LAR division into the ideas of matter and form. The representation of a thing we have expressed in the form of a 2LAR with its four titles of Quantity (form-of-the-matter), Quality (matter-of-

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<sup>1</sup> The brief treatment given to Locke's theory in this treatise cannot do full credit to his work and runs the risk of unintentionally making Locke's theory appear ridiculous. Although nothing can substitute for actually reading Locke's *Essay*, a well-written synopsis of Locke's "representationalism" has been given by Chappell in *The Cambridge Companion to Locke*, pp. 49-55 (Cambridge University Press, 1994).

<sup>2</sup> Nicolas Malebranche (1638-1715) was a Cartesian philosopher who held that knowledge of objects required certain representative ideas - "archetypes of objects as they exist in the mind of God."

the-matter), Relation (form-of-the-form), and Modality (matter-of-the-form). Each of these titles has, in turn, been described using three functional descriptions (i.e., “identification” etc.). However, we have already taken note that we cannot regard these functional descriptions as primitive. In other words, we do not take “identification” and so on as the primitive constitutive functions of what, for want of a better word at this time, we might call “elementary functions of *nous*.” Indeed, these functions are *generally* descriptive and each can be seen as a genus for a variety of more specific functions, whereas a primitive function must be *specific* and incapable of being sub-divided into more primitive forms of *a priori* know-how.

We have also discussed the logical division of representations in terms of different types according to the initial and final form of representation (analytic, synthetic, and anasynthetic), as well as according to the object of representation. In the latter classification we have introduced the technical terms: 1) data of the senses; 2) perceptions; 3) intuitions; 4) concepts<sup>3</sup>; and, 5) ideas<sup>4</sup>. We introduced this terminology as appropriate in our exploration of Aristotle’s “that-which-is-clearer-to-us,” and we must therefore suspect that our “catalog” of different kinds of representations is not yet complete. Nor are the current terms in this “catalog” divorced from each other as coordinate terms. For example, intuitions and concepts are “objective” perceptions; we might (correctly) anticipate that we will find “subjective” (affective) perceptions entering into the theory in due course. These terms, and others yet to come, serve us in developing more clearly our ideas concerning the *Dasein* and *Existenz* of the manifestations of our *noumenal* idea of representation.

Along with our ideas of representation, we have also been led to explore the empirical and the transcendental ramifications of the theory. Our epistemology ultimately reveals itself to have *consequences* in matters of fact. We will keep in mind that so long as we are closer to “that which is clearer to us” the development of the *rational* elements of a theory faces a plethora of possibilities from which we must choose, and facts must guide the development of theory. It is from these facts that we obtain *empirical* principles such as the principle of the functional invariants and Piaget’s two principles of equilibration.

However, if we are to build a proper science of mental physics, empirical principles are insufficient. *Transcendental* principles – acroams – are also a necessary part of a proper science. Principles of this sort have their grounding in that which is *necessary* for the *possibility* of experience, the facts of which we cannot seriously contest. The *Verstandes-Actus* have this quality with regard to what is “clearer to us” about representations, and the threefold synthesis

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<sup>3</sup> The word "concept" has been used in this chapter in two different ways. From § 1 through § 4, we have used "concept" in a non-technical, everyday-language way. It was not until § 5 that we began using the word "concept" in a technical connotation.

<sup>4</sup> Recall that an "idea" is a concept having a supersensible object - a *noumenon*.

(apprehension, reproduction, recognition) stand similarly with regard to the phenomenon of experience. So it is also with transcendental apperception and its representation: consciousness.

Yet, for all that we have accomplished in this gathering of the ideas of representation, we still stand only a short distance from “what is clearest to us” and, presumably thus, a long way from “that which is clearer by nature.” We have, at present, produced a collection of ideas but have not yet succeeded in bringing these ideas together in a *system*. Thus so far, what we have achieved is merely an aggregate, and it is clearly apparent that we have not yet even identified all of the necessary elements that must go into a systematic doctrine of Critical metaphysics. We have many questions still to address. Our next Chapter will introduce us to the wider metaphysical landscape in which what we have discussed so far takes root.