F. H. Parker: A Realistic Appraisal of Knowledge

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I. INTRODUCTION

Before trying to look at the nature of knowledge, a prior question may arise: *Is* there any such thing as knowledge? There is little point in attempting to study something which is illusory or non-existent. Buildings really exist, so it is sensible and practicable for men to learn about them. But is there any point in men studying knowledge? Is there really such a thing as knowledge, or is it an illusion?

A. True Knowledge Exists

In the history of men and ideas we have seen the collapse of so many pieces of "real, certain, true knowledge" that we are today, understandably, more than a little skeptical. In the ancient world it was "truly known" that the earth was flat, and that it was in the center of the universe. And not very many years ago most people were convinced that it was impossible to transmit voices, let alone pictures, over long distances. Indeed, so often have we discovered the falsity of widely held ideas that we perhaps tend to think that man progresses rather by the rejection of "truths" than by their discovery. And to increase this skepticism we find even our most deep-seated convictions—such as the belief in an external physical world—being questioned by many of our modern philosophers. So it's little wonder that we're inclined to be skeptical of the existence of true knowledge.

Now there is no denying, of course, that knowledge is a fragile thing, hard won and easily lost, and that we have perhaps less of it than we might like to think. But our present question is: Is there *any* knowledge? Is there *any* truth? If so, can knowledge or truth be attained? And when the question is put in this more radical way, it is not hard to see that the answer must be: "Yes, there is at least some knowledge, some truth." For to deny it—to say: "There is no knowledge; there is no truth"—is to contradict oneself.

If the statement, "There is no knowledge," is *true*, then it is *false*, for the statement itself claims to be a piece of knowledge. That is, the speaker knows that there is *no* knowledge. And if this should cause the speaker to become more wary and to say only, "I don't know whether or not there is any knowledge, any truth," he again claims knowledge of *that*—of the fact that "I don't know…."

The only way, therefore, to maintain such a radical skepticism is by not speaking at all—and indeed, by not even thinking, for thinking is a kind of speaking to oneself; and such a maintenance of skepticism could not of course be a defense of it. Such a skeptic would not be a human being, but rather a vegetable, as Aristotle pointed out (in a slightly different context) more than two thousand years ago. "We can demonstrate negatively that such a view is impossible," he said, "if only our opponent will say something. For in saying something he necessarily pretends to

know something: On the other hand, if he will not say anything, there is no use arguing with him For a man who will say nothing is, as such, no better than a vegetable; and one cannot argue with a vegetable".[1]

There is, then, such a thing as true knowledge. And this statement is necessary, or to contradict it is to contradict oneself. There is at least some true knowledge.

B. Intentionality and Its Bi-polarity

Having now reassured ourselves of the reality of true knowledge, we must return to the topic of the *nature* of that knowledge. What is knowledge? And first of all, what is the broadest and deepest trait of knowledge as presents itself for our inspection?

Knowledge is most basically characterized by its "intentionality".[2] The most fundamental feature of knowledge—and indeed of all awareness—is that it is always *of or about* something other than itself. We have an experience *of* war . . . a concept *of* a triangle. We make propositions *about* bodies gravitating, and arguments *about* the interior angles of a triangle equaling two right angles. All awareness, all consciousness, all knowledge is *about* something other than itself. For this reason this most fundamental trait of knowledge is called its "intentionality." All knowledge is "intentional"; every piece of knowledge is an "intention."

It is obvious at once that the word "intention" has here a somewhat different meaning than usual, for we ordinarily use the word to pertain to acts of *will* or *purpose*. Indeed, intentions are the things which, when they are good, pave the road to hell, as Dr. Johnson remarked, and, when they are dishonorable, are what we must warn our daughters against. Yet this does not mean that the word is here being given a meaning which is absolutely different from its usual meaning. Indeed, the moment we stop to think about it, we can see present in acts of will the very same *of*- or *about* –structure which we have noted in instances of knowledge. You have the intention *of* studying, or the purpose *of* making friends, for example. Furthermore, it is not difficult to see that willing and purposing are "intentional" precisely because they contain a cognitively "intentional" element. You can have the purpose of being courteous, for example, only when you have the knowledge of what courtesy is.

Thus the most basic trait of knowledge is its intentionality—the fact that it is always *of* or *about* something other than itself. And this trait sharply distinguishes instances of knowledge from other things. Your concept of a triangle, or your proposition about its interior angles, for example, is *of* or *about* the triangle; but the triangle isn't of or about anything—it is just itself. Thus intentionality is the distinguishing feature of all items of consciousness and the most basic general characteristic of knowledge.

Knowledge contains two poles; the knowledge and the object. Now as soon as we recognize this intentionality of knowledge, we see that it contains two distinct elements or "poles"; the *knowledge-pole* and the *object-pole.* In your knowledge of the world, there is the knowledge and there is the triangle. In short, intentionality (and therefore knowledge) is bi-polar; it is characterized by its bi-polarity. There is what is intended, and there is the intention of it. The former is the object of knowledge—the object-pole, the objective-pole; and the latter is the knowledge of it—the knowledge pole, the subjective-pole.

[1] Metaphysics, 1006a, 12-15. This is a paraphrase rather than a literal translation.
[2] The next three paragraphs are taken almost verbatim from Francis H. Parker and Henry B. Veatch, *Logic As a Human Instrument*, Harper, 1959, p. 13.

In order now to gain some insight into the nature of knowledge, we must turn to a separate consideration of these two poles. The fact that knowledge is bi-polar means, of course, that we cannot consider either of these poles without some reference to the other, that a consideration of the object of knowledge requires some reference to the knowledge of it, and vice versa. But nevertheless let us first consider primarily the object, and then primarily the knowledge of it. What, then, is it that we know when we know? And what is involved in our knowing of it?

II. THAT WHICH WE KNOW: IS THE OBJECT OF KNOWLEDGE

The object of knowledge is being. What is it, then, that we know when we know it? The simplest and most basic answer to this question is that at least it is *something*, of *some* sort. Even if we know nothing else about the object of knowledge we at any rate know that is *something*. Moreover, we know that it *is* something, that it is in some sense something existent. What kind of existence the object has is a more specific question, and the answer differs from case to case. When our knowledge is true, its object exists in the real objective world independently of the knowledge of it. But even in cases of the grossest hallucination, the object has some kind of existence. When the patient suffering from *delirium tremens* says that he sees a writhing snake where you see only a bedpost, it does little good to tell him that there isn't any snake at all. On the contrary, it is rather evident that what he sees is in some sense existent, for it is surely having a very real effect on him. Indeed, it is difficult to imagine any experience at all which is not in some sense an experience of something existent, for if the object were simply non-existent, it would not be an object of experience, and hence there would be no experience.

So whatever else we shall say, and whether the awareness is true knowledge or merely illusion, we must at least say that what we know when we know it is something existent. The mind is by its very nature ordered to *being*, and every fulfillment of this ordering in a bit of actual knowledge consists in an actual cognitive contact with something which in some sense exists. Thus the object of knowledge is being.

But granted this much, what more can we say about the object of knowledge? Here two distinct questions arise. In the first place, *what* is the object of knowledge? What is its nature? And in the second place, *where* is the object of knowledge? What is it status, or *"locus,"* in the world? Let us now consider each of these questions in turn, remembering again that their consideration will require some reference to the knowledge of the object.

A. What is the Object of Knowledge? (The Nature of the Object)

Our first answer to this question is apt to be: "Why, the objects of knowledge are simply the things we observe with our senses—the trees, rocks, men, and other natural things we see about us." Now if it were not for the word "simply," this answer would be largely true. But the word "simply" indicates a belief, usually tacit, that knowledge consists merely in sense-experience—that the objects of knowledge are merely what we see, hear, touch, taste, and smell, and that any non-sensory elements are non-sensical, or at least mere "theory" or "interpretation." "Seeing is believing," we say; and we are apt to mean also that believing is seeing (or touching or hearing, etc.) Moreover, we often say "I can't imagine how that could be so," as if true knowledge of the thing consisted in our ability to form a sensory image of it. What, then, is the object of knowledge? Our first, unexamined answer is likely to be that it is always what we sense in a sense-image.

But this answer, as it stands, is inadequate. And we can see that this is so if we will but consider carefully the characteristics of sense-images and their objects and compare them with what we mean by an object of knowledge.

Sense objects are constantly changing and hence unique and unrepeatable. Suppose, for example, that you hold up a penny in front of a group of people and ask them to tell you what they see. At least the unsophisticated

members of your audience will at first say that what they see is a penny. But you, wishing to discover the characteristics of sense-objects as such, will insist that they confine their answers to just what they really and literally see, that is, sense. Now, perhaps, one person who is directly in front of the coin will say that what he sees is a circle; one slightly to the side will say that what he sees is an ellipse; and directly to the side of the penny will say that what he sees is a straight line. Again, someone in the back of the room will say that he sees as small circle; someone seated very close, a big ellipse; and finally, if there should wander into the room someone suffering the results of an overly enthusiastic celebration, he might well say that he sees two circles.

Furthermore, as you yourself look at the penny, you notice that your visual image is a microcosm of ceaselessly seething flux. It vibrates in its position; its color waxes as the light varies; it becomes more and then less round as your fingers move.

Having conducted this experiment, what will you now conclude? Mustn't you conclude that the objects of sense are constantly changing, and that no two sense-images are ever the same, either from person to person or from time to time? Even if two of your spectators, eager to disprove your conclusion, should bump heads in their attempt to get their eyes in the same location so as to see the very same thing, you would point out to them that the position of their eyes is not exactly the same, that the acuity of their sight differs, that your nervous hand has shaken the penny slightly, that the light has faded a little, and that innumerable other differing factors make it impossible for them to see exactly the same thing. And if one of the two should then claim that he can have the same image twice in a row, you would invite him to try it, as you did, and would suggest that his own sense-experience from moment to moment is subject to these same fluctuating and therefore unrepeatable conditions.

Indeed, thinking of possible experiments with senses other than sight, you would add that the simple fact that the organs of sense are physical and in space and time is enough to prove that sense experience is a constant flux and that no two sense-objects can ever be the same, for no two places or times are ever the same. So you would conclude that every sense-object is incurably *transitory* and *unique,* and hence *unrepeatable,* either in more than one *mind* or in more than one *moment* or in more than one *object.* Sense-objects are thus the most rugged of individualists.

The objects of knowledge are stable and communicable. And yet the members of your audience will all swear (or affirm) that they see a penny, and that they therefore have the very same object in mind. They will insist that they all understand each other, that they are communicating with each other. But how can this be, you will ask, if the object of knowledge is merely a sense-object, since every sense-object is fluctuating, unique, and unrepeatable? Indeed, it is of the very essence of knowledge that its object be stable, common, repeatable, and communicable. What would science, for example, be if there were nothing common and public to be communicated from one person to another and from one time to another? There would evidently no longer be any science, but rather sciences—as many different sciences as scientists. Indeed, you might even say that there would be as many different sciences as different moments in the consciousness of the scientist, for you saw that it is impossible for even one person to have the same sense-image at two different times, for the conditions of his sensing are constantly changing.

So you see that knowledge is communicable from person to person, while the unique and fluctuating character of sense-objects, makes them incommunicable. And you therefore conclude that this is one reason why the object of knowledge cannot be merely the object of sense.

Then, furthermore, in thinking back over your experiment you remember that you had kept referring to the object on display as a penny; and you wonder how that could be if the object before your mind were merely a unique sense-object, different from one moment to the next. For what you merely saw at one moment was certainly not the same as what you merely saw at the next, for the place, position, and so on of the penny and your eyes were different in the two moments. And yet you say that you had the same object in mind, and you applied the same name to "it."

With this thought you see second reason why the object of knowledge cannot be merely the object of sense. What you know is a penny, and this idea is applicable to many, many sense-images and their objects. But your visual image of this penny now is certainly applicable to nothing save itself. There are many pennies, but there is only one this-penny-now. Your ideas that make up your knowledge are therefore applicable to many different things—to different things at the same or different times and to the same thing at different times—but your sense-images are certainly applicable only to themselves. How then could we classify, if knowledge were not concerned with something applicable to many things? How could we generalize? How could science formulate such laws as "all bodies gravitate," if knowledge consisted merely of sense-images, each of which is applicable only to itself?

So the object of knowledge cannot be merely the object of sense. The absolutely unique and constantly changing character of sense-images therefore presents two reasons why the objects of knowledge cannot be merely the objects of sense: (1) Knowledge and its objects are communicable, while sense-images and their objects are incommunicable. (2) Knowledge and its component ideas are applicable to many things, while sense-images are applicable to nothing save themselves. The incommunicability of sense-objects means that if they were the mind's only objects each mind would be held incommunicado in a private world all its own. The inapplicability of sense-images means that if they were the mind's only window the world would be completely novel for that imprisoned mind at each moment. What it experienced would not be the same as it or any other mind had ever before experienced; its eyebrows would be perpetually lifted in startled amazement.

Such, then, is the world of the senses—a world of utterly fleeting, irrevocable, and incommunicable sights and sounds and tastes and smells and feels. If these, then, were the only facts, there simply would be no knowable reality at all. "Knowledge" would be, to use William James' phrase, "a blooming, buzzing, confusion," and hence not knowledge at all. But there *is* knowledge, as we have seen; and it is communicable and stable. We may therefore conclude that knowledge cannot consist merely in sense-experience, that the object of knowledge cannot be merely a sense-object.

The object of knowledge is the stable object of reason. What, then, can qualify as the object of knowledge? In considering the sense-object as candidate, we discovered that the qualifications of the object of knowledge are primarily its repeatability, and hence its stability—its repeatability in many minds (its communicability) and its repeatability in many sense-objects (its applicability). Do we find in our consciousness any such stable, repeatable object?

We have already seen that we do. Ideas or concepts are universal. In addition to the unique, fluctuating, unrepeatable sense-objects, we found a common, stable, repeatable object which we referred to as a "penny". "This unique object that I now sense is a penny;" etc. but if this stable, common object of knowledge is not the object of sense, it must be the object of some other cognitive faculty. What is this other faculty? It is what we call reason, intellect, or intelligence. The object of stable, communicable knowledge is the stable common object of reason. It is the object of what we call an "idea" or "concept" as distinguished from an image or sensation, and its

hall-mark, as we have seen, is its stability and repeatability. And it is for this reason that ideas or concepts are said to be universal, in contrast to sense-images which are always particular and individual.

Universals are required for any description or explanation. Moreover, it is precisely this universality of the object of reason which qualifies it as an object of knowledge. The unique particular explains nothing. Since it stands only for itself, it obviously cannot explain anything else. To explain anything, or even to describe it, is possible only in terms of universal concepts or ideas. This is to say that this is a book, or that that man is tall, or that you are studious, is necessarily to speak in terms of universals. For "book" is a universal; it applies not only to this book before you, but also to any and every book. So also with "tall," "man," "studious," and all such objects. They are universals and, as such, applicable to many, whereas a sense-image is always an image of just one thing and nothing else.

Such reflections, then, should be enough to convince us that the object of knowledge must be the stable, communicable object of reason, that knowledge not only involves particular fluctuating sense-images by which we are brought into contact with the individual and changing aspects of reality, but also involves unchanging, universal ideas by which these changing particulars may be understood.

B. Where Is the Object of Knowledge? (The Status of the Object)

Having now seen something of the nature of the object of knowledge, we must turn to our second question concerning the objective-pole of knowledge: Where are these stable, unchanging, universal objects of knowledge? What is their status in reality? What is their locus?

A riddle: how can we have unchanging knowledge of changing nature? Our first answer to this question will probably be: "Why, they are just where they seem to be—in the natural world about us." Although we shall see that this natural answer is ultimately the correct one, it presents us at once with a serious problem. For we have seen that since knowledge is communicable and stable, its objects must be universal, stable, and unchanging. Yet we have also seen (and we would naturally maintain) that the natural world is quite the opposite—that it is made up of individual, unstable, and constantly changing things. If this is so, how can the objects of knowledge be located where we naturally think they are—in nature? Indeed, a knowledge of changing nature would seem to be impossible, for to conceive things as stable and universal when they are really changing and individual is not true knowledge, but rather illusion.

Thus if you know that your pen is green when as a matter of fact it really isn't green at all, having already changed and become different at the very instant you "know" it—indeed, if it isn't even any thing at all, not green, not a pen, not a physical substance, not even an "it," but only a continual unintelligible flux—then certainly to describe it by such stable, universal concepts as "pen," "green," "physical," etc. is not merely futile but grossly false.

It thus seems certain on the one hand that knowledge requires a stable, unchanging object and yet just as certain on the other hand that the natural world is anything but stable and unchanging. Our question therefore seems to force us into the following dilemma: If the objects of knowledge are in nature, then nature isn't changing; and if the objects of knowledge are not in nature, then we can have no knowledge of nature. Hence we seem to be driven to the conclusion that either nature isn't changing or else we can't have knowledge of it. But our common sense would reject both of these alternatives. Yet how *can* it? Evidently it can do so only by solving the following riddle: How can we have unchanging knowledge of changing things? How can the unchanging objects of knowledge reveal the changing things of nature?

This riddle has been the focal point and spring-board for much of the history of philosophy, and the various alternative ways of solving it were seen and propounded in ancient Greek thought. These alternatives are basically four in number, though the first three are not so much solutions of the riddle as declarations that it is insoluble.

Thus in the first place (1) we may say that nature is truly continually changing—even is pure flux—and that we therefore cannot have knowledge of it (since knowledge requires an unchanging object). This was the position of the philosopher Heraclitus—or at least his position as interpreted by Plato. Or in the second place (2) we may insist that we do have knowledge (because to deny it is to contradict oneself, as we saw earlier), and that the natural world therefore does not change (again, since knowledge requires an unchanging object). This was the position of Parmenides and his Elactic school of philosophy, especially as propounded by Zeno in his famous paradoxes. Or in the third place (3) we may insist both that we do have knowledge and that nature is constantly changing and then escape the riddle by adding that our knowledge is *therefore not of nature*. This was the position of Plato; for him the objects of knowledge inhabit a realm of forms separate from the natural world, and our awareness of nature is only fluctuating sensory "opinion."

And yet our common sense rejects these three alternatives, and, indeed our whole lives are based upon such a rejection and upon the conviction that we can have genuine, stable, scientific knowledge about the changing natural world. Indeed, if our knowledge could not be about nature as it really is, but consisted merely of illusory pictures which we human beings paint, the remarkable success that we have had in using this "knowledge" to control nature would be simply fantastic and unintelligible. Conscious control of nature necessarily pre-supposes an understanding of nature as it really is. And finally, it might well be argued that even the denial that our knowledge is of nature as it really is presupposed that we have some such knowledge. For does not the speaker profess to know at least what he means by "nature" and "real"? He is assuming, it would seem, that he knows at least enough about nature to know that we can have no knowledge of it. So here again we run into the same contradiction which we noted earlier in connection with the necessity of there being some knowledge of some sort.

So we do and must reject these three alternative answers to our riddle. Yet how *can* we? What other solution can we find?

The solution: the objects of knowledge are the stable natures of changing things. We mentioned earlier that there is a fourth solution to the riddle, and it would now behoove us to see whether it offers us any hope. This alternative, which is the view first clearly developed by Aristotle, the student of Plato, accepts the riddle and then tries to solve it. It asserts that we *do* have knowledge, that nature *is changing*, and *yet* that our knowledge is of *nature*. This, then is the alternative which we must accept if we are to avoid the difficulties just discussed. But how can we accept this alternative? The riddle still remains to be solved.

The solution to the riddle lies in the convergence of two different approaches: (1) an "objective" approach, by an understanding of what is involved in change itself, and (2) a "subjective" approach, by understanding the character of our cognitive faculties. Let us consider each of these separately.

Change itself requires unchanging aspects. When you analyze any change,[3] you will see that it is not quite such a "whooshy" flux as you might at first suppose. Indeed change itself requires unchanging elements, or there would be nothing *to* change *from* or *to*.

Suppose you consider the change, "your walking across the room." There is a flux here—the process of walking. But there is also you—the stable person who walks. You are the same person before, through, and after your walking. Furthermore, the position that you occupied before walking, and the position that you now occupy after walking, are themselves constant and unchanging: each could be given a geographical definition. Hence not everything in this change is changing. On the contrary, at least three items remain the same: you and the two positions.

Or to take another example, if your hair changes from brown to grey, it is nevertheless still hair, and your hair and the colors brown and grey, do not change. Again, change by its very nature involves unchanging elements. If there were just sheer flux, there would be no thing which is *fluctuating*, nor anything for it to fluctuate from and to. If there were just sheer process, there would be no thing to proceed, nor anything for it to proceed from and to. By our first "objective" approach, then, we see that the "all-or-none" assumption—that a thing is either changing in toto or not changing at all—is wrong. We see therefore that changing nature just in order to be changing must contain unchanging, stable features which *could* be the objects of our knowledge.

Reason is revelatory of nature. To turn now to our second, "subjective," approach, we must recall our earlier discussion of the view which identifies knowledge with sense-experience and the object of knowledge with the sense—object. That view, as we saw, maintains that sense-experience alone reveals the world about us, that any non-sensory elements are at worst nonsensical and at best merely interpretive constructions. And since as we also saw, the objects of sense are notorious for their absolute uniqueness and unrepeatability—in short, for the constantly fluctuating character—it would naturally follow from such a view that the world about is a sheer flux containing nothing stable and unchanging.

But we have just now seen that the world about us is not, and cannot be, a mere flux, that change itself necessarily involves unchanging features. Consequently it must follow that the sense-experience view by itself is wrong (as we also saw earlier in a different context), the sensation is not our only avenue to the world about us. But what other avenue do we have? We have already seen that we have also the faculty of reason, whose object is the stable, unchanging, communicable object required for knowledge. The obvious conclusion for us to draw, then, is that the *unchanging features present in changing nature and the unchanging objects of reason and of knowledge are one and the same thing.*

In doing this we see that reason, as well as sense, reveals the real world about us. Recognizing that there is, of course, a changing face of nature, and that it is this which our senses disclose to us, we must at the same time recognize that there are certain stable, unchanging aspects of the natural world, and that it is precisely the function of reason (intellect or intelligence) to disclose these.

The stable objects of knowledge are the natures or essences of things. Indeed, when we speak of the "natures" or "essences" of things, what else do we mean but just such stable patterns present in reality itself? For example, we refer to human "nature" or the "nature" of hydrogen, or we say that something is "of the essence," or pertains to

[3] The nature of change and the changing world is the special concern of the philosophy of nature. For an excellent account of the nature and principles of change see John Wild, Introduction to Realistic Philosophy, Harper, 1948, Chapters 13-16.

the "essence of," something else. What we mean in all such cases is just that aspect of things which is really present in them but which at the same time is free from that ceaseless flux which strikes our senses.

Thus we all recognize that when an individual man is born or dies, human nature itself is not thereby created or destroyed. Or again, if one draws a triangle and then, by adding two sides, makes it a parallelogram, this hardly changes the essence of a triangle into the essence of a parallelogram. On the contrary, the essence or nature of a triangle—it's "triangularity"—is still the same, even though that particular, or any particular triangle has entirely changed its character.

These stable natures are the objects of every science. And thus as soon as we recognize the fact that such unchanging natures are really present in nature—that they *really* underlie the ceaseless flux of things and are no mere creations of the mind—then we can at once see that these are the very same as the objects of knowledge—that it is just these permanent and unalterable aspects of things which are the proper objects of any science. Thus a contemporary biologist says:

> The nature of things are in a certain sense unalterable and eternal; between the nature of a thing and the various aspects of its activities there is a fixed, unalterable, necessary relation; which is in its own order the foundation of Science.
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> Thus, to take a specific example, the substance we call iron has a certain definite specific nature. So long as iron remains itself, its behavior under any definite set of circumstances will remain the same. It will always have the same molecular weight and melt at the same temperature. On the other hand, what we can say about any particular piece of iron has not by any means this specific and unalterable character. The piece of iron may be large or small, round or square, in this place or that. It may lose its identity by combining with some other element. We shall perhaps realize this more fully if we consider that a description, no matter how detailed or complete, of any particular bit of iron—its exact position, size, shape, weight, and color, etc.~ would really add nothing fundamental to what chemistry can already tell us about the element iron. The more perfectly the description brings out the individual characteristics of the thing, the more useless it is, from the genuine scientific standpoint; for Science deals, and can deal, only with the general. Nevertheless, in all concrete, real objects, we can realize the existence of these two aspects, the general and the particular, the specific and the individual, or, as Aristotle put it, the formal and the material; or, looking at the matter from yet another angle, the necessary and the contingent. What appertains to the nature of a thing is necessary—must be so—what appertains to the individuality is contingent—may or may not be so.
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> Science thus has as its object the natures of things and all its effort consists in an attempt to sift out or disentangle from the complex moving current of ephemeral, individual, contingent events, the definitions of the natures involved in the movement and the laws of their interactions, so as to build up a corpus of permanent and immutable truth; a pattern not only acceptable to the intelligence but coincident in its essential points with reality itself.[4]

What, then, is the answer to the riddle? How can we have unchanging knowledge of changing things? The answer is that we have unchanging rational or scientific knowledge of the unchanging aspects of changing things. What and where are the objects of knowledge? They are stable natures of essences, and they are present in the changing things of the world about us. The solution to our problem lies in the fact that the objects of knowledge are the stable natures of changing things.

[4] W.R. Thompson, *Science and Common Sense*, Longmans, Green, & Co., 1937, pp. 22-23. Although Mr. Thompson is a biologist by profession, in this passage he is writing as a philosopher, and his view should therefore be judged on philosophical rather than biological grounds.

We must have knowledge of things themselves, not merely of their unchanging aspects. This answer, however, while true as far as it goes, does not yet seem to be complete. For if the objects of knowledge are the unchanging aspects of real things, our knowledge still seems not to be of the real things themselves. The world about us, we say, is made up of changing things; but our knowledge, we have said, is only of certain aspects of these things; not of the things themselves, but merely of certain of their traits. And yet, as already stressed, it is nature itself—natural things—that we control with our scientific knowledge; we do not control merely their natures or essences. Hence we must have knowledge not only of the stable natures of things, but also of those things themselves. How can we account for this?

To account for this we have only to remember that the natures or essences which are the objects of knowledge are the nature of real things. Where are the objects of knowledge, we asked? *In* the natural things that we sense, was the answer. It is only *in* things and as the essences *of* things that these natures exist.

Insofar, therefore, as our knowledge is relevant to what really exists, it must be knowledge of things through their natures or essences. In other words, while natures or essences are the objects of knowledge, they are so, in a sense, only instrumentally, since it is by their means that we come to know the real things in which these natures exist.

Things themselves are the material objects, and their natures the formal objects, of our knowledge. In order, therefore, to gain a complete answer to our question concerning the nature and status of the objects of knowledge, we must recognize that the objects of our knowledge are two-fold, or double-phased.[5] First, there are the natures or essences of things, which are the immediate objects of our knowledge. Second, there are the things themselves of which they are the natures, which things themselves are the mediate objects of our knowledge. The mediate objects (things, themselves) are sometimes called the material objects of knowledge. The material objects of knowledge are thus the real things which we know, and the formal objects of knowledge are those intelligible aspects (nature or forms) through which we come to know them. Or in other words, the material object of knowledge is what we know, and the formal objects of knowledge are what we know about it. Thus what you know, for example, is this book (material object); and you come to know it through its stable natures such as "book," "epistemology," "difficult," etc. (formal objects).

With this we have now more completely answered our question. We not only have unchanging knowledge of the unchanging aspects of things. We also have unchanging knowledge of those changing things themselves through their unchanging aspects. We know material objects by means of formal objects.

But this more complete answer seems unhappily to raise another question. We saw earlier that the object of sense is the changing, natural thing, and we have just now seen that the material object of knowledge is also the changing, natural thing. If this is so it would seem that the object of knowledge is the object of sense after all, and that we do not need the distinct faculty of reason or intellect to apprehend what sense already apprehends! Isn't there a needless duplication here?

Sense and reason are both genuine faculties and are closely connected. It is certainly true in the first place that the objects of reason and the objects of sense (and, correspondingly, the faculties of reason and sense) must be understood as interfused in an extremely intimate way. This is denied, as we saw, by the view which regards sense alone as revelatory of the world about us and which confines reason to the "interpretive" task of filing and

[5] The remainder of this paragraph closely follows the footnote on p. 47 of Parker and Veatch, *op. cit.*

arranging the data of sense. This is the view of "Empiricism," a school of philosophy which has had a number of famous historical representatives. This view, as we saw, is untenable precisely because it makes stable, communicable knowledge of extramental reality impossible. On this "Empiricist" view the really cognitive part of our experience is incommunicable, and the communicable part is not genuinely cognitive—that is, not revelatory of the world about us. It is the great insight of "Empiricism's opposite, "Rationalism," that reason is revelatory of reality; and we have seen that reason discloses real aspects of the world just as much as sense does.

But the intimate inter-relation of the objects of sense and reason is also denied by "Rationalism," for it goes to the extreme of regarding reason as the only genuine cognitive faculty. But if this were so, if sense did not genuinely reveal something about reality, then the world of science and common sense would be devoid of flux and fluidity and peopled only by stable, unchanging natures. It is the great insight of "Empiricism" that sense also grasps a genuine aspect of reality.

So while recognizing the truths contained both in "Empiricism" and "Rationalism," we must avoid the errors of their extremes by recognizing the genuineness of both faculties, sense and reason, and of their intimate relation. But just how are they related?

Sense and Reason bear on the same reality. To see their relation, let us recall our earlier example of the penny. You see the penny, and you also know or understand or conceive the penny. The penny, then, is the object of both sense and reason. But what about the penny do you see? And what about it do you understand or conceive? You see the penny as this unique, particular, elliptical patch, changing gradually but relentlessly as you look. But you understand and conceive the penny as having certain unchanging properties throughout its fluctuations in your vision. You conceive it as a penny, as a coin, as copper, etc.

It should by now be apparent that what we must here recognize is the fact that the object of sense is two-fold, just as we saw the object of rational knowledge to be. Sense has its material object and its formal object, and so Reason. And seeing this distinction enables us to see the closeness and yet the difference between reason and sense and their objects.

Sense and reason have the same material object but different formal objects. The object of reason is materially the same object as that of sense, but is a different formal aspect of it. You now see this page (material object), for example, as a unique, fluctuating conglomeration (formal object). And you understand this page as being made up of all the distinct formal natures or traits—"page," "white," "rectangle," etc.—which are fused or conglomerated in the object of sense. Thus the material object is the thing itself—this page—and it is grasped by both sense and reason. The formal object of sense is the individual and changing aspects of the material object—this unique page here and now. The formal object of reason is the universal and unchanging aspects of the material object—the natures "page," "white," "rectangle," etc. Thus sense and reason both apprehend the same object, but sense apprehends *it insofar as it is unique and changing,* while reason grasps it *insofar as it is made up of universal unchanging natures.*

The object of sense is thus a confused and fluctuating welter of stable natures, each of which can be abstractly and specifically considered by reason. This process by which we come to know things as having certain stable structures I called *abstraction*. And that from which we abstract to gain this knowledge is the confused, fluctuating object of sense.

And here it is well to be sure that we see that although knowledge does not consist merely in sensation, all knowledge must certainly begin in sensation. From what we see, hear, touch, feel, etc., we abstract the stable natures really present in the things thus sensed and thereby come to know the natures of these things as they really are. Though these stable natures which are the formal objects of reason are really present in the object of sense, the eyes of sense are blind to them. At this point an analogy may help.

Let us suppose that in the midst of a raging battle a messenger is ordered to carry a codified message from the front lines back to headquarters. Since the message is in code, and since the messenger, lest he be captured and tortured, has not been give the key to the code, he cannot read it. Yet he carries it; and when he has carried it to headquarters, the intelligence officer will be able to read the message because he has the key to the code and can therefore decodify it.

The messenger in our analogy is sensation, and the codified message that he carries is the object of sense. The intelligence officer is reason, and the decodified, meaningful message that he reads is the object of reason. Thus sense bears a message (the stable natures which are the formal objects of reason) which is meaningful only to reason.[6] And the decodification of this message by reason is the process called abstraction. But what more can we say about the nature of abstraction?

As we have seen, the natural things which we sense in the world about us always consist of a conglomeration or fusion of different natures or traits. In the world of nature, no nature or characteristic ever exists just by itself. On the contrary, it always exists in union with a whole host of other natures or characteristics which do not have to be connected with it, but which as a simple matter of fact just are conjoined with it accidentally and contingently. Before such a nature can be apprehended just as it is in itself, therefore, it must first be extricated or disentangled, so to speak, from that whole context of natures in which it finds itself in a given instance. Now it is precisely this process of extricating and disentangling which goes by the name of abstraction.

Consider, for example, a chemical compound like salt. Salt has a certain nature or essence. Yet no particular existing bit of salt is ever just the essence of salt and nothing else. It has, indeed, the essence of salt. And yet it also has present in it many other characteristics. It is fine or coarse, in the chemist's laboratory or on his dinner table, warm or cool, five grams or ten grams, and so on.

Now all of these other characteristics—texture, place, temperature, etc—themselves natures or essences. But we recognize quite readily that they are wholly accidental to the nature or essence of salt, and it to them. There is nothing about the nature of salt that requires that it be in the quantity of five grams, for example. Accordingly, if we wish to understand either the nature of salt or the nature of five grams, then we must first abstract these traits or natures from those other traits or nature with which they are fused in the particular concrete instance. Furthermore, if we were to gain complete knowledge of that particular concrete instance of salt, we would have to abstract each and every one of the traits or natures fused together in it. Fortunately for our human energies, however, such complete knowledge (even if it were possible!) is unnecessary.

This account of the process of abstracting indicates another fact about our knowledge and its objects, namely that we invariably come to know one thing through a multiplicity of its traits. In other words, a single material object

[6] Cf. Etienne Gilson, *Realisme Thomiste et Critique de la Connaissance*, Paris: J. Vrin, 1947, p. 218. These two paragraphs are an extension of Gilson's metaphor.

of knowledge comes to be known through a number of its intelligible aspects, each of which in being abstracted becomes a formal object of knowledge.

For instance, suppose you form an acquaintance with a given individual, John Doe. Do you come to know him all at once and in a single concept? Hardly. Thus as first you may know little more about him than that he is a student, that he is majoring in chemistry, that he is peculiarly addicted to going to sleep in class, etc. And perhaps after you desire to know no more. But however that may be, the interesting thing about the situation is that an individual who is truly one being, a real unity, is nevertheless known through the many natures that are present in him.

Nor is it merely individuals in the material world that come to be known through a number of concepts of their several natures. On the contrary, even such a thing as a nature or essence itself we can, in most cases, come to know through a whole multitude of concepts. True, a nature is not itself made up of natures, as is an individual material—and it can therefore not properly be called a material object of knowledge. And yet any nature does comprehend or comprise with itself a number of "notes," by which we may take note of it, so to speak, or come to know it.

Thus for example, consider some such thing as human natures. How do we understand this? We recognize man as being a substance, and more specifically a living substance, and still more specifically a living animal substance. We realize, moreover, that man is a particular kind of animal, a rational animal. In short, it is through all of these notes such as substance, living, animal, rational, etc. that we come to understand the single nature of man. The same is true, for example, in understanding the nature of hydrogen. Do we not understand this as an element, as a colorless, odorless gas, as inflammable, as lighter than any other known element, etc.? Again we come to know a single nature through many of its notes.

Knowing is a "withdrawal and return." In addition, then, to the fleeting, individual events of nature, there are also present in reality certain enduring and unchanging aspects which we call the essences of natures of things. It is these which are the formal objects of our stable, communicable knowledge, just as it is the changing face of nature which is grasped in our sense-impressions. What we call scientific knowledge, therefore, is a knowledge of things in terms of their permanent, universal natures, rather than in terms of their particular, changing aspects. As Aristotle so constantly reiterated, science is always of the universal and necessary, never of the merely individual and accidental. And these universal and necessary natures are present, in a confused way, in the objects of sense; their understanding, and consequently the understanding of those things whose natures they are, requires that they be abstracted from the objects of sense experience.

Thus in knowing anything, we complete, so to speak, a full circle, or rather a spiral—a withdrawal and a higher level return. We start with sensation and its object grasped as a fusion of many traits or natures into a fluctuating whole. We then abstract or withdraw certain of these nature and concentrate upon them just in themselves. And then, finally, we return to the whole but now with new light, understanding the whole material object through certain of its stable traits.

What, then, is the object of knowledge? The material object of knowledge is the same as the material object of sense—some integrated thing in the world about us. The formal object of rational or scientific knowledge is the stable structure of this material object, and we grasp it by abstracting from the unique, fluctuating formal object of sense. What, then, do we know when we know? We know the real things in the world about us through their stable, unchanging natures.

III. HOW WE KNOW: THE ACT OF KNOWLEDGE

We have now examined at some length the nature of the object-pole in knowledge—the nature and status of the objects of knowledge. We have seen that the formal objects of knowledge are the stable, unchanging aspects of things and that these things themselves which we come to know through their stable aspects are the material objects of knowledge. We must now turn our attention to the knowledge-pole—the mind's intention of some object—and try to discover what is involved in it. Just as our examination of the object of knowledge required some discussion of the knowledge of it, so also our consideration of the knowledge-pole will necessarily involve some reference to the object. But nevertheless we shall concentrate primarily upon the knowledge-pole—the intention. What, then, is involved in our knowing of objects?

A. What It Is Not: a Physical or Quasi-physical (Transitive) Action

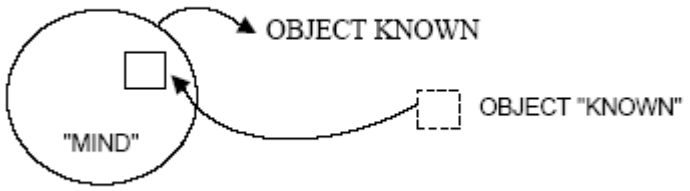
At the beginning of our inquiry into the nature of the object of knowledge, we examined the common tendency to identify the object of knowledge with what we see, touch, hear, etc. So also now we must first consider a parallel tendency concerning the act of knowing, a tendency, namely, to regard the act of knowing as being just like any natural, physical change of event. What is the act of knowing? Our first answer is apt to be that it is a physical process just like all the physical processes in the world around us.

Thus when you analyze your awareness of this book, for example, you may say that the process goes something like this: First of all, there is the book—a real, physical thing existing in a certain definite spatial location. Then there is the light reflected from this book, wave or particle (or "wavicles") of light passing from the surface of the book to your eye. Upon reaching your eye, you may continue, these particles of light pass through the cornea, aqueous humour, lens, and vitreous humour and then strike the nerve-endings in the retina where they produce an electro-chemical impulse. This impulse, you may then say, travels along the optic nerve to the occipital lobe of the brain in the back of your head, where-upon, finally, you say you "see" the book. Thus awareness, you may suggest, is merely a straightforward physical process, just like any other.

But what about this account? How must we evaluate it? In order to evaluate it, let us ask the same two questions which we have asked previously. What and where is the object of knowledge, according to this materialistic account of the process of knowing? Let us take the second question first.

The object "known" is not the object known. Where, then, according to this materialistic account, is the object of your knowledge? Where is the book that you see? You will probably answer at once" "Why, out there, in space, where we said it was." But let us be careful here. Is this true? Is the book that you see (according to this view) "out there"?

Let us look once more at the process involved. The seeing of the book requires all of the steps enumerated above. You do not see the book until after all these steps have occurred, until the end of the process. And when the process is completed, the earlier stages no longer exist. But where is the end of this process? In the back of your brain. Hence it would appear that the physical thing that you physically see is not "out there," separate from you in space, but rather in your head—"under your hat." And for this reason this materialistic account of the act of knowing has some times been call the "under-the-hat" theory. It might perhaps be diagrammed thus:



But this answer must seem very strange, to say the least. If the book that you really see is in the back of your brain, behind your eyes, how does it happen that it seems to be "out there," in front of your eyes? The philosopher, Hobbes, one of the main exponents of this materialistic view, tried to answer this question by saying that the brain *projects* the particles back out again—since for every physical action "there is an equal and opposite reaction"—and that such projection accounts for the apparent external location of the object. But even if such projection of sensed objects actually takes place (which is certainly dubious, to say the least), still the book that you actually see would not be the book that think you see. Even if the projective reaction were *so* equal and opposite as to make the "seen" particles bump into the bundle of particles that originally reflected the light (that is, the book that you see), still they would not be the same particles, for no two physical things can every occupy the same space at the same time—no two physical things are ever identical. So even when the "under the-hat" theory is given its most favorable interpretation, what you know would still never be what you think you know. To "know" something is therefore not to know it.

If, on the other hand, the particles that you actually see are really in the brain (as seems more plausible); then another disturbing implication arises. Since everything which is known—the objects of all science and common sense—would then be physically contained in human brains, the arduous and painful process of education would seem to be rather inefficient, to say the least, for we ought then to be able to learn everything there is known by the relatively simple process of brain surgery.[7] We would be able to learn a given thing, presumably, simply by opening the appropriate skull, and the brain surgeon should therefore be the wisest of all men. It hardly needs to be mentioned, however, that no brain surgeon will ever find a book in your brain (at least while you are thinking about a book), nor when what you know is the universe will he find the universe in your brain—for this would mean that the whole is contained in a rather small and insignificant one of its parts. Nor would it help for the "under-the-hat" theorist to object that this may be because our present knowledge of the brain is far from complete.

Moreover, the objects known by this wisest of men, the brain surgeon, would in turn be in his own brain. And this would mean, again that the objects of his wisdom would not be the same as the objects "known by" or present in, his patient's brain. So we are presented with the paradoxical situation in which the wisest man cannot be the wisest man because in knowing other brains he knows only his own brain. Again, to "know" something is not to know it.

Furthermore, to carry this just one step further, the brain surgeon could not after all really be said to be operating on other brains at all, but only on his own, for the operation that he knows is in his own brain. And as to how a person can be both brain-surgeon and brain-patient at the same time is mysterious to say the least.

[7] The following argument is adapted from A.O. Lovejoy, The Revolt Against Dualism, Open Court, 1930, pp. 237-238.

Finally, having seen that on this view you could never know anything outside your own brain, there is a serious question as to whether you could even know anything in your own brain. For here again the process of "knowing" would be a physical one, whose beginning and whose end are consequently different. If, for example, the object of your knowledge were a certain structure in one of the fissures of your frontal lobe, your knowing of it would consist in a physical series whose last member would be located somewhere else in your brain. If, for instance, your knowledge of that frontal fissure consisted in part in the formation of a visual image of it, that visual image would not occur until the process had terminated in the back of your head, in which case the object of your knowledge is not the frontal fissure at all, but rather something in your occipital lobe. And if you were to know this particle in the back of your head, what you would know would be another particle somewhere else. And so on indefinitely.

In short, when we ask the Materialist where the object of his knowledge is, he must, if he is consistent, answer that the object which he *"really knows*" is at best different from the object which he "*thinks*" he knows" (the former being under his hat or projected out from under his hat) and at worst no object at all—since his knowing of anything means that he does not know it, but rather something different, ad infinitum. So the Materialistic account of the act of knowing is untenable, in the first place, when we consider the location of its object of knowledge.

The object "known" is merely the object of sensation. And if we ask the Materialist our second question—*What* is the object of knowledge? What is its character?—we see a second reason for the unacceptability of his theory. Every factor in the Materialistic account of the act of knowing is purely physical, so the object of knowledge is also purely physical. Now every purely physical thing, as we have seen, is a constantly fluctuating, absolutely unique and unrepeatable individual. In short, the object of knowledge for the Materialist is always the object of sensation. But we have already seen that the object of knowledge cannot be merely the object of sense, for the former is stable and repeatable while the latter is fluctuating and unrepeatable. Consequently, the Materialistic account of the act of knowing also breaks down when we consider the nature of the object. The Materialist theory of knowledge inevitably tends to be a sensationist theory of knowledge and is also for that reason unacceptable. It is therefore doubly impossible for the act of knowing to be merely a physical action.

We have now seen that our physical contacts with the world can result (at best) merely in unique, fluctuating sense-images. And yet we have also seen that knowledge absolutely requires a stable, repeatable object. Where then does this object come from and by what act do we know it?

If in rejecting the Materialistic view we nevertheless continue to think exclusively in terms of physical actions, we shall have to say that these stable objects of knowledge are constructed or created by the mind itself. In other words, if, on the one hand, we (rightly) maintain that our physical contacts with the world can at best produce only sense-images, and if, on the other hand, we believe (wrongly, as we shall see) that our physical contacts are our only cognitive contacts with the world about us, then it will follow that those universal, stable objects which are the *sine qua non* of knowledge cannot come from the world about us. On the contrary, they will have to come from within; they will have to be produced by the mind itself. Now there is no empirical evidence for a brain physically producing physical universal objects—and, indeed, a physical thing is just what cannot be universal. This productive activity of the mind will therefore have to be regarded as non-physical or immaterial. But since the assumption that our only cognitive contact with the world is physical is itself a physicalistic assumption, and since, moreover, this mental production will almost invariably be described in the same way as physical production, the act of knowing is for this view quasi-physical.

Thus if you again analyze your knowledge of this book, you may say that you receive a "blooming, buzzing confusion" of sense-data, chaotic and meaningless in themselves. In order to make them into meaningful knowledge, you may continue, your mind must take this chaotic mass of sense-data and organize it in terms of certain categories or classifications, such as "book," "rectangle," "paper," or such as "substance," "being spatially and temporally located," etc. Since these interpretive categories are universal and unchanging, they cannot, on this view, have been derived from the world about you. On the contrary, they must have lain "a priori" in your mind, waiting to be imposed upon masses of sense-date, thereby to create out of these sense-data meaningful objects of knowledge.

And of course you cannot afford to say that it is merely your individual mind which constructs these objects, for then what you know could not be the same as what any one else knows. You would then be locked up in your own little cognitive world—a condition called "solipsism," where "only yourself" can be known to exist. Hence, you must say that the mind which constructs the objects of knowledge is a general or over-all mind, either the human mind as such (a view held by the philosopher, Kant) or the mind of the absolute (a view held by the Absolute Idealists, e.g. Fichte, Hegel, and others). Knowable reality is then, in any case, constructed or created by the knowing mind with its "ideas." Hence this view which regards the objects of knowledge as constructed by the mind is called Idealism, or better, "Idea-ism." The act of knowing is an act of making. What, then, shall we say of this view?

In the first place, it is at any rate not subject to the second criticism we levied against the Materialistic theory, for the Idealistic view maintains that the objects of knowledge are stable and universal, not merely unique, fleeting sense-impressions.

The Idealistic view is, however, subject to other serious objections. In the first place, since it regards the object of knowledge as being constructed by the mind, we could on this view never know anything as it really is independently of the mind. But would this account permit that scientific knowledge of reality which we have seen is involved in our control over nature? Obviously not, for if we can never know a thing as they really are, independently of the mind, then we certainly could not possibly exercise any conscious control over them. We may, of course, take the metaphysical leap of Absolute Idealism and extend the mind so that it includes everything, asserting that reality is mental or ideal in its real nature, and that real things therefore are the things that the Absolute Mind constructs in its knowing. But in the first place this sort of view is certainly entirely alien to our deepest common convictions. And in the second place, if the knowing mind is merely one Absolute Mind in many manifestations, as is maintained by Absolute Idealism, what happens to the individual independence and freedom of mind and action which we prize so highly? Academic freedom, for example, would certainly then be merely "academic." And finally, and even more telling, even if real things were the constructs of the Absolute Mind's acts of knowledge, still no human mind could ever know anything as it really is, since for the human mind to know it must construct and alter, and hence it could never know anything as it was really constructed by the cognitive act of the Absolute Mind.

But there is a more serious, and more specifically epistemological, objection to this Idealistic view which regards the act of knowing as construction of its object. The essence of this Idealistic theory is that the act of knowing changes its object into something new. But let us follow out the implications of this view. In knowing A, you must change or construct it into B, in which case you do not know A at all. Thus in "knowing" A you do not know A—which is a flat contradiction. If you say that it is B which you know, that B is the object of your knowledge, the same happens again, for just in knowing B you change B—again a contradiction. And so on.

Indeed, the Idealistic account reminds one of the story of the donkey and the carrot. The donkey, you will remember, is led on by a carrot held dangling just out of reach in front of him by a pole fixed to his harness. Hence every step that the donkey takes to get the carrot keeps him from getting it; every one of his attempts simply pushes the carrot out of his reach. To "get" the carrot is not to get it. So also, on the Idealistic view of the act of knowing, to "know" anything is not to know it, for to "know" it is to change it into something different. Indeed, how can the Idealist even know his own theory, if to know anything is to change it and hence not to know it? Because of this "always reaching but never attaining" character of the Idealistic theory, we might perhaps diagram it thus:

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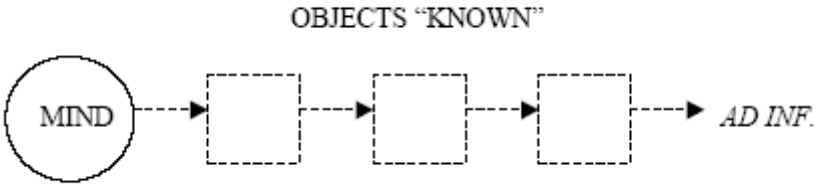

At this point, however, the Kantian Idealist might object that Kant never said that the original thing is known, and hence that there is no contradiction at all. The original thing, according to Kant's terminology, is not itself an object of knowledge at all, but only the material from which the mind produces the proper object of knowledge, the "phenomenon." Once this object has been constructed by the imposition of mental forms on sensory materials, why then the resulting object, the "phenomenon," is just simply known as it is, intuitively. Now this qualification does indeed avoid the contradiction and infinite regress we have just been discussing—but only by conceding the point at issue, that the act of knowing cannot be a constructive, transitive action. In short: if the proper object of knowledge is transformed transitively, then contradiction and infinite regress inevitably result; and if the theory is qualified so that the act of knowing does not transform its proper object, then, of course, knowing itself is no longer regarded as a quasi-physical transitive action.

The act of knowing cannot be described in physical terms. Hence, we cannot, with Idealism, regard the act of knowing as a quasi-physical act which constructs or produces its object. The Idealistic view is wrong—indeed, it is self-contradictory—for on this view, just as on the Materialistic view, to "know" something is not to know it. In fact, the two theories, in the last analysis, boil down to about the same thing, because they both describe the act of knowing after the fashion of physical actions, and for every physical action "there is an equal and opposite reaction"—Materialism stressing the physical action of the object upon the "mind" and Idealism stressing the quasi-physical action of the mind upon the object. Thus these apparent opposites are at bottom very much alike.

This same situation may also be put in terms of our earlier discussion of the contrast between sensation and reason.[8] The Idealist shares the same false assumption with the Materialist, namely, that our only contact with a world beyond us is sensation. They are both right to this extent: that contact with a world beyond us requires sensation. But they are wrong in assuming that such contact is in sensation alone. The Materialist, wishing about all to save the contact, reduces knowledge to sensation and thus has an object that cannot be known. The Idealist, wishing above all to save the characteristics of permanence and universality in knowledge, makes the object a construct of the mind and thus has a "knowing" without an object.

Is there now any over-all moral to this story of Materialism and Idealism? There is. The moral is this: In order to describe the act of knowing we must stop thinking in physical terms. The act of knowing, and for that matter every act of awareness, is in essence non-physical, and hence we cannot correctly describe it after the fashion of physical actions. This point is all-important, if we are to gain any understanding of the nature of knowledge. Knowing is not a physical action and hence cannot be adequately described as such.

[8] For this way of putting the situation I am indebted to Professor Samuel M. Thompson of Monmouth College.

B. What it is : An Immanent (Non-physical) Act

So far, however, we have said only what the act of knowing is not—that it is not of the nature of physical actions, with which our experience first and most frequently confronts us and with which we are therefore most familiar. This negative description is legitimate and important, however, for it is through its contrast with physical actions that we come to understand the non-physical nature of knowing. But what, more specifically, is the contrast?

Physical actions are transitive. The basic characteristic of physical action is what is called its *transitivity*—the fact that the action passes across from the agent or actor over into the patient or thing acted upon. Thus as you write, for example, energy passes through your arm over into your pencil to change it, and then from your pencil over into the paper to change it. Or if you cut an orange with a knife, the activity passes over into the orange to produce a real, new property in it—its being cut into halves. Thus every physical action is basically transitive.

IV. THE ACT OF KNOWING IS IMMANENT

But no act of awareness is transitive. Knowing the orange does not change the orange to produce any real, new property in it, as cutting the orange does, for if it did we would change the orange into something different, and hence not know *it*. On the contrary, *knowing* does not act on the orange at all; it acts only on the mind that knows the orange. The orange, it is true, does act on the knower; but this action is not physical or transitive, or we would be *oranges*, or something like them, instead of knowing them. The act of knowing is thus basically characterized by its *immanence*, for the act of knowing remains immanent with the knowing faculty. No act of awareness ever passes transitively over into its object to change it. Quite the contrary; any act of awareness produces its change only immanently, with the mind. Your cutting the orange physically changes both you and the orange. But your knowing the orange changes only you (and then not merely physically); it makes not a whit of difference to the orange.

Here, however, two possible objections need to be forestalled. In the first place, though knowing makes no change in the thing known, it is evident that the physical conditions of knowing do make such a change.[9] Here the materialist is right. Before you can see this page, for example, the page must be illuminated to a certain extent, the medium between the page and your eyes must be transparent, your eyes must possess certain physical properties, etc. All these physical factors do influence what you see, because their actions are transitive. If you blow smoke between your eyes and this page, or if you cross your eyes, what you see will be changed. But your knowing does not itself consist in these various physical actions—as we have seen. Light striking your eyes is not the same as seeing; air vibrations striking your ears are not the same as hearing; and brainwaves are not the same as thinking. And it is these acts of awareness themselves which produce no change in their objects.

In the second place, we realize that once knowledge is acquired it can, of course, be used in action to alter objects. After you understand the nature of atomic energy, for example, you can apply that knowledge in such a way as to make quite a difference in the world—either constructively or destructively. But such practical application of knowledge is quite distinct from the knowledge which is thus applied. And the knowledge itself, just insofar as it is knowledge, makes no difference to the thing known whatsoever.

[9] The Heisenberg uncertainty principle is a recognition of a particular instance of this general situation. The Heisenberg principle is sometimes wrongly interpreted to mean that the very act of awareness itself changes the position or velocity of the particle.

Thus the act of knowing is an immanent, non-physical act, making no change at all in its object. And from this fact there follow two very important corollaries.

The object of knowledge is independent of and unrelated to the knowledge of it. In the first place, the immanence of the cognitive act means that the things we know are quite independent, in both their existence and their nature, of our knowledge of them. This does not mean, of course, that the things that we know are always independent of any and every act of knowing or consciousness, or independent of mind for obviously many of the things that we know are mental in character or depend on some mind for their existence and nature—such things as purposes and fictions, for example. But it does mean that anything that we know is independent of the precise particular act by which we know it. Your friend's thoughts, for example, are dependent upon *his* mind, but are quite independent of *your* thinking about them. Now what does this independence of the objects of knowledge mean?

It means that the things that we know are in no way related to us by the fact that they are known. This last qualification is of course necessary, for the thing known may be, and usually if not always is, related to the knower by one or more relations other than the cognitive relation. This page is related to you by a number of real relations such as distance, dissimilarity, etc.; and with respect to these relational properties, it depends on you as it would on any other natural thing. But it is not related to you, and hence does not depend on you, in any of its properties, insofar as you know it. And this is so, we have seen, because the act of knowing is immanent rather than transitive, and hence produces no real property in the page which could give rise to any such relation of dependence. You, of course, are related to it, and you therefore depend upon the page that you know, since that knowledge does change you. But the page is not cognitively related to you.

Thus the cognitive relation is called a *non-mutual* relation. That is, the knower is related to the known, but there is no real, answering, mutual relation from the known to the knower.[10] When you say that what you know has the property of being "known by" you, therefore, you cannot mean that this is a real property of the thing, for it you did knowing would have changed it by producing that real property, and hence you would not know it at all. This peculiar relation, "known by," is not a real property of the thing at all, but only a mental relation set up by your mind when, in reflection, it moves back from the object of the real relation, "knower of," to your knowing mind which really has that relational property.

Thus it follows from the immanence of the cognitive act that its object is not really related to, nor consequently dependent upon, that cognitive act. Knowledge is always a revelation into the lives of things wholly undisturbed by that revelation.

The second very important corollary of the immanence of the act of knowing is a point which we have already constantly referred to in somewhat disguised forms. This is the fact that the cognitive relation is a relation of identity. This means nothing more than that when you know something, you know it, itself, identically—and not something different which your mind has produced. This is not a mere verbalism. It is rather a necessary truth about the nature of knowledge.

This fact that the cognitive relation is one of identity follows from, and only from, the fact that the act of knowing is immanent and non-physical rather than transitive and physical. For if knowing is a transitive action, then it changes its object into something different, and hence is not a knowing of it at all. But as soon as we regard

[10] For an excellent introductory account of the nature and types of relation, see Wild, *op. cit.*, pp. 347-351.

knowing as an immanent act, then it makes no change whatsoever in its object and hence consists really in a knowing of it, identically, as it really is.

Just as the immanence of the cognitive act implies that the cognitive relation is one of identity, so also to regard the cognitive act as transitive implies, as we have seen, that the cognitive relation is not one of identity, but rather, as best, merely one of *similarity*. On this view it has to be admitted that we do not actually know real things themselves, but rather at best only their copies or likenesses. On this view, that is to say, we know only our own ideas (described either Materialistically or Idealistically), and these are at best mere copies of reality.

But this copy-theory[11] is self-contradictory in just the same way as its parent, the transitive theory of the cognitive act, was seen to be. For if we know merely copies and not real things themselves, then we cannot possibly know even that there are real things which are such that they are similar to the copies that we know. To know that X is similar to Y, we must first know Y itself, identically, and that it in itself really is similar to X. But this is just what the copy theory denies.

Here it might be objected that although we cannot directly know the "external" real things itself, we can nevertheless infer the real thing from its idea-copy. But this will not work, for such an inference is impossible unless here again, we grasp, identically, what is inferred. To infer X from Y is to have the mind pass from Y to X *itself*, identically. But this identity is, again, just what the copy-theory denies. Hence it cannot assert that we infer the real thing. The very same is true if it is then suggested that the idea-copy represents or signifies the real thing, for if it signifies it, then we are led by the sign to the thing itself, identically. Thus our conclusion stands: On the basis of the copy-theory we cannot know even that there *is* anything which copies. Thus we are locked within the iron ring or our copy-ideas. This is what has been called the "egocentric predicament."

Furthermore, if we can never know anything itself, identically, then we cannot even know the idea-copy which is declared to be similar to an unknowable real thing. If it is objected that we can indeed know the idea-copy itself, identically, then there is no necessary reason to deny that we can also know the real thing itself, identically. And if it is suggested that, while we cannot know the idea-copy itself directly, we can know it through another idea-copy which is similar to it, then the same difficulty arises again and we are in an infinite regress.

Thus we must conclude that on the basis of the copy-theory, insofar as it is consistent, we can know neither real things nor their idea-copies. In short, on the basis of the copy theory, insofar as it is consistent, we can never know anything. But such a theory is self-contradictory because, as we have already seen, it asserts that we know at least one thing, namely that cognitive relation is merely one of similarity, that ideas are merely copies of things. But, by the argument just presented, this is to assert that we know that we cannot know. And this is possible only when the act of knowing is recognized as being immanent and non-physical ant therefore as not making any change in its object.

What, then, is the act of knowing? It is an immanent, non-physical act making its change only in the cognitive faculty and not in its object. And from this principle there follow two corollaries: (a) The objects of knowledge are independent of and not really related to the acts of knowing them; (b) The cognitive relation is one of identity; to know something is to know it. . . .

[11] This theory is also often called "representationalism" and "epistemological dualism."