

Positivism and Realism

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1. PRELIMINARY QUESTIONS

EVERY PHILOSOPHICAL POINT OF VIEW is defined by the principles which it considers fundamental and to which it constantly recurs in argument. But in the course of the historical development of such a view these principles tend to change—whether they be reformulated, extended, or restricted, or even gradually altered in meaning. At some time then the question arises whether we should still speak of the development of the one point of view at all, and retain its old name; or whether a new viewpoint has arisen.

If, along with the developed view there also exists an "orthodox" viewpoint which retains the first principles in their original form and meaning, sooner or later some terminological distinction between the old and the new will arise automatically. But where this is not clearly the case, where rather the different exponents of a "viewpoint" employ extremely different, even contradictory, formulations and meanings of the principles, confusion arises; the adherents and opponents of the view talk at cross purposes; each selects those statements which can be used in defense of his own opinions, and all ends in fatal misunderstanding and obscurity. These confusions disappear only when the different principles are distinguished, and each is tested separately for its meaning and truth. In such an examination of principles one quite ignores, for the time, the question of the historical contexts of their origins, and of their names.

I should like to apply these considerations to the modes of think-

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ing grouped together under the name "positivism." They have, from the time August Comte invented the term until the present, undergone a development which furnishes a good example of what has just been said. But I do not do this with the historical aim, say, of determining a strict concept of positivism as it has appeared in history, but rather in order to contribute something to a positive settlement of the dispute carried on nowadays concerning certain principles which pass as fundamental to positivism. Such a settlement concerns me the more because I myself advocate some of these principles. I am concerned here only to make their meaning as clear as possible; whether or not one will, after this clarification, attribute them to "positivism" is a question of very little importance.

If one wishes to characterize every view which denies the possibility of metaphysics as positivistic this is quite unobjectionable, as a mere definition; and I should in this sense call myself a strict positivist. But this holds, of course, only under the presupposition of a special definition of "metaphysics." What the definition of metaphysics is which must be adopted here need not interest us at the moment; but it hardly agrees with the formulations usual in philosophic literature, and further determinations of positivism which refer to such formulations lead at once into confusions and difficulties.

If we say, as frequently has been said, that metaphysics is the theory of "true being," of "reality in itself," of "transcendent being" this obviously implies a (contradictory) spurious, lesser, apparent being; as has indeed been assumed by all metaphysicians since the time of Plato and the Eleatics. This apparent being is the realm of "appearances," and while the true transcendent reality is to be reached only with difficulty, by the efforts of the metaphysician, the special sciences have to do exclusively with appearances which are perfectly accessible to them. The difference between the ways in which these two "modes of being" are to be known, is then explained by the fact that the appearances are immediately present, "given," to us, while metaphysical reality must be inferred from them in some roundabout manner. And thus we seem to arrive at a fundamental concept of the positivists, for they always speak of the "given," and usually formulate their fundamental principle in the proposition that the philosopher as well as the scientist must always remain within the given, that to go beyond it, as the metaphysician attempts, is impossible or senseless.

Thus it amounts to identifying the "given" of the positivist with the "appearances" of metaphysics, and to believing that positivism is at bottom a metaphysics, from which one has left, or stricken,

out the transcendent; and such an opinion may indeed often enough have inspired the arguments of the positivists, as well as those of their opponents. But this belief finds us well on our way to dangerous errors.

The term "the given" itself is a cause of grave misunderstandings. "To give" usually connotes a three term relation: it presupposes first, someone who gives, secondly, one to whom is given, and thirdly, something given. The metaphysician finds this quite in order, for what gives is the transcendent reality, what receives is the knowing mind, which makes what is given to it into its "content." But evidently the positivist will from the very outset have nothing to do with such notions; the given is for him but a word for what is most simple and no longer questionable. No matter what word we choose, every one will be capable of misinterpretations; if we speak of "experiences" we seem to presuppose the distinction between what experiences and what is experienced; with the use of the phrase "content of consciousness" we seem burdened with a similar distinction, and in addition with the complicated concept of "consciousness," which in any case did not exist until invented by philosophy.

But even apart from such difficulties it is perhaps still not clear what is actually meant by the given. Do only such "qualities" as "blue," "warm," "pain," come under this heading, or e.g. also relations between them, or their order? Is the similarity of two qualities "given" in the same sense as the qualities themselves? And if the given is somehow worked up or interpreted or judged is this working-up or judging not also in some sense something given?

But it is not obscurities of this sort that give rise to the current matter of dispute: the bone of contention appears among the various parties only with the question of "reality."

If the rejection of metaphysics by positivism signifies the denial of transcendent reality then it seems the most natural conclusion in the world that the positivist attributes reality only to non-transcendent being. The fundamental principle of the positivist then seems to run: "Only the given is real." If one enjoys word-play one can lend to this proposition the semblance of tautological self-evidence by making use of a peculiarity of the German language in thus formulating it: "Es gibt nur das Gegebene." (There is only the given.)

What shall we make of this proposition? Many positivists may have expressed and advocated it (especially, perhaps, those who represented physical objects as "mere logical constructions," or "mere auxiliary concepts"), while this view has been attributed to others by their opponents. We must insist, however, that whoever

states this proposition seeks to establish an assertion which is metaphysical in exactly the same sense and degree as its apparent contradictory: "There is a transcendent reality."

The problem about which the matter revolves here is evidently the so-called problem of the reality of the external world, and there seem to be two parties: that of "realism" which believes in the reality of the external world, and that of "positivism" which does not. In truth, I am convinced that it is quite senseless to set two views in opposition in this manner, for neither party really knows what it wants to say (which is the case with every metaphysical proposition.) But before I explain this I should like to show how the more obvious interpretations of the proposition "only the given is real" actually lead at once to well-known metaphysical views.

This problem can take the form of the question about the existence of the "external" world only if somehow we can distinguish between inner and outer; and this distinction is made by considering the given as a "content" of consciousness, as belonging to one or several subjects *to whom* it is given. Thus the immediate datum would have attributed to it some sort of mental character, the character of a representation or an idea; and the proposition would then state that this character pertained to all reality: no being outside of consciousness. But this is nothing but the fundamental principle of metaphysical *idealism*. If the philosopher thinks himself able to speak only of what is given to himself we have before us a solipsistic metaphysics, but if he thinks he may assume that the given is distributed among many subjects we have a metaphysics of the Berkeleyan variety.

On this interpretation positivism would be simply identical with the older idealistic metaphysics. But since its founders certainly desired something quite different from a renewal of that idealism, this interpretation is to be rejected as contrary to the anti-metaphysical attitude of positivism. Idealism and positivism are incompatible. The positivist Ernst Laas has written a work of several volumes to demonstrate the irreconcilable opposition which exists on all points between them; and if his student Hans Vaihinger gave to his "Philosophy of As If" the subtitle an "idealistic positivism" it is but one of the contradictions from which this work suffers. Ernst Mach especially emphasized that his own positivism developed in an opposite direction to that of Berkeleyan metaphysics; and he and Avenarius laid great stress upon not taking the given as a content of consciousness. They tried to exclude this concept from their philosophy altogether.

In view of the uncertainty in the camp of the positivists them-

selves it is no wonder that the "realist" fails to observe the distinctions we have discussed, and directs his arguments against the thesis: "There is nothing but the contents of consciousness," or "There is only an internal world." But this proposition belongs to idealistic metaphysics, and has no place in an anti-metaphysical positivism, which is not affected by these realistic arguments.

Of course the realist can think that it is simply inevitable to conceive the given as contents of consciousness, as subjective, as mental—or whatever expression is used; and he will then consider as a failure the attempt of Mach and Avenarius to take the given as neutral and to resolve the distinction between inner and outer, and will believe that a view free of any metaphysical basis is impossible. But this line of thought is rarely met with. And however it may fare, in any case, the whole business is much ado about nothing, for the "problem of the reality of the external world" is a meaningless pseudo-problem. This must now be made evident.

2. ON THE MEANING OF PROPOSITIONS

It is the peculiar business of philosophy to ascertain and make clear the *meaning* of statements and questions. The chaotic state in which philosophy has found itself during the greater part of its history is due to the unfortunate fact that, in the *first* place, it took certain formulations to be real questions before carefully ascertaining whether they really made any sense, and, in the *second* place, it believed that the answers to the questions could be found by the aid of special philosophical methods, different from those of the special sciences. But we cannot by philosophical analysis decide whether anything is real, but only what it *means* to say that it is real; and whether this is then the case or not can be decided only by the usual methods of daily life and of science, that is, through *experience*. Hence we have here the task of making clear to ourselves whether any meaning can be attached to the problem of the reality of the "external world."

When, in general, are we sure that the meaning of a question is clear to us? Evidently when and only when we are able to state exactly the conditions under which it is to be answered in the affirmative, or, as the case may be, the conditions under which it is to be answered in the negative. By stating these conditions, and by this alone, is the meaning of a question defined.

It is the first step of any philosophizing, and the foundation of all reflection, to see that it is simply impossible to give the meaning of any statement except by describing the fact which must exist if

the statement is to be true. If it does not exist then the statement is false. The meaning of a proposition consists, obviously, in this alone, that it expresses a definite state of affairs. And this state of affairs must be pointed out in order to give the meaning of the proposition. One can, of course, say that the proposition itself already gives this state of affairs. This is true, but the proposition indicates the state of affairs only to the person who understands it. But when do I understand a proposition? When I understand the meanings of the words which occur in it? These can be explained by definitions. But in the definitions new words appear whose meanings cannot again be described in propositions, they must be indicated directly: the meaning of a word must in the end be *shown*, it must be *given*. This is done by an act of indication, of pointing; and what is pointed at must be given, otherwise I cannot be referred to it.

Accordingly, in order to find the meaning of a proposition, we must transform it by successive definitions until finally only such words occur in it as can no longer be defined, but whose meanings can only be directly pointed out. The criterion of the truth or falsity of the proposition then lies in the fact that under definite conditions (given in the definition) certain data are present, or not present. If this is determined then everything asserted by the proposition is determined, and I know its meaning. If I am *unable*, in principle, to verify a proposition, that is, if I am absolutely ignorant of how to proceed, of what I must do in order to ascertain its truth or falsity, then obviously I do not know what the proposition actually states, and I should then be unable to interpret the proposition by passing from the words, with the aid of the definitions, to possible experiences. For in so far as I am able to do this I am also able in the same way to state at least in principle the method of verification (even though, often, because of practical difficulties I am unable to carry it out). The statement of the conditions under which a proposition is true is *the same* as the statement of its meaning, and not something different.

And these "*conditions*," we have already seen, must finally be discoverable in the given. Different conditions mean differences in the given. The *meaning* of every proposition is finally to be determined by the given, and by nothing else.

I do not know if this insight ought to be called positivistic; but of course I should like to believe that it underlay all those efforts which appear by this name in the history of philosophy, whether or not it was ever clearly formulated. We may indeed assume that it constitutes the real nucleus and motive force of many quite perverted formulations which we find among positivists.

If we but once attain the insight that the meaning of every proposition can be determined only by means of the given we can no longer conceive the *possibility* of another opinion, for we see that we have discovered simply the conditions under which opinions in general can be formulated. Hence it would be quite mistaken to see, somehow, in what we have said a "theory of meaning" (in Anglo-Saxon countries this insight, that the meaning of a proposition is determined wholly and alone by its verification in the given, is often called the "experimental theory of meaning"). What precedes every formulation of a theory cannot itself be a theory.

The content of our insight is indeed quite simple (and this is the reason why it is so sensible). It says: a proposition has a statable meaning only if it makes a verifiable difference whether it is true or false. A proposition which is such that the world remains the same whether it be true or false simply says nothing about the world; it is empty and communicates nothing; I can give it no meaning. We have a *verifiable* difference, however, only when it is a difference in the given, for verifiable certainly means nothing but "capable of being exhibited in the given."

It is obvious that verifiability is used here in the sense of "verifiable in principle," for the meaning of a proposition is, of course, independent of whether the conditions under which we find ourselves at a specified time allow or prevent the actual verification. There is not the least doubt that the proposition "there is a mountain of a height of 3000 meters on the other side of the moon" makes good sense, even though we lack the technical means of verifying it. And it would remain just as meaningful if one knew with certainty, on scientific grounds, that no man would ever reach the other side of the moon. The verification remains *conceivable*; we are always able to state what data we should have to experience in order to decide the truth or falsity of the proposition; the verification is *logically* possible, whatever be the case regarding its practical feasibility, and this alone concerns us.

But if someone should say: within every electron there is a nucleus, which, though always present, never has in any way any external effects, so that its existence never manifests itself in nature—this would be a meaningless assertion. For we should have to ask the maker of the hypothesis: what do you really *mean* by the presence of that "nucleus"?; and he could answer only: I mean that something exists there in the electron. We should inquire further: what does that mean? What would be the case if it didn't exist? And he would have to answer: everything would remain exactly the same as before.

For according to his assertion, the "somewhat" in the electron has no effects, and there would simply be no observable change: the realm of the given would not be affected in any way. We should judge that he had not succeeded in communicating the meaning of his hypothesis, and that therefore it made no sense. In this case the impossibility of verification is not factual, but *logical*, for by reason of the utter ineffectiveness of that nucleus a decision regarding it based on differences in the given is *in principle* excluded.

One cannot here suppose that the distinction between the impossibility of verifying something in principle and the mere factual, empirical impossibility is not clear, and is therefore sometimes difficult to draw; for the impossibility *in principle* is logical impossibility which does not differ in degree from empirical impossibility, but in very essence. What is empirically impossible still remains conceivable, but what is logically impossible is contradictory, and cannot therefore be thought at all. As a matter of fact we find that in scientific thinking this distinction is always clearly and instinctively felt. The physicists were the first to reject the statement given in our example regarding the forever hidden nucleus of the electron, with the criticism that it was no hypothesis at all, but mere empty word play. And in all times the most successful scientific investigators have adopted this standpoint with respect to the meaning of their statements, since they have acted in accordance with it, even if for the most part unconsciously.

For science, then, our standpoint does not represent something foreign and out of the ordinary, but it has in a certain sense always been more or less taken for granted. It could not be otherwise, because only from this standpoint is a proposition verifiable at all; and since all the activities of science consist in examining the truth of propositions, it continuously acknowledges the correctness of our insight by its practice.

If express confirmation were still necessary, it would be found most conspicuously at critical points in the development of science where investigation is forced to bring the self-evident presuppositions to light. This is the case where difficulties of principle lead one to suppose that something may be wrong with these presuppositions. The most famous example of this sort, which will remain forever memorable, is Einstein's analysis of the concept of time, which consists in nothing but the analysis of the *meaning* of our statements about the simultaneity of spatially separate events. Einstein said to the physicists (and to the philosophers): you must first state what you *mean* by simultaneity, and you can do this only

by showing how the proposition "two events are simultaneous" is verified. But with this you have *completely* determined its meaning. What is true of the concept of simultaneity holds of every other concept: every proposition has meaning only in so far as it can be verified, and it *says* only what is verified, and simply nothing more. If one should say that it did contain something more he must be able to say what more this is, and to do this he would have to tell us how the world would differ if he were mistaken. But this cannot be done, since by assumption all the observable differences are already included in the verification.

In the example of simultaneity the analysis of the meaning, as is appropriate for the physicist, is carried only to the point where the decision regarding the truth or falsity of a proposition about time is based on the occurrence or non-occurrence of a definite physical event (e.g. the coincidence of a pointer with a point on a scale). But it is clear that one can ask further: what does it *mean* to say that the pointer indicates a definite point on the scale? And the answer can only be made by reference to the occurrence of certain data, or as one generally says, certain "sense-impressions." This will be generally admitted, especially by physicists. "For positivism will always be right in this, that there is no other source of knowledge than sense-impressions" says Planck¹ and this evidently means that the truth or falsity of a physical statement depends entirely upon the occurrence of certain sense-impressions (which constitute a special class of data).

But there will always be many who are inclined to say: granted that the truth of a physical statement can be tested only by the occurrence of certain sense-impressions, this is not the same as asserting that the *meaning* of the statement is also thereby exhaustively given. This latter must be denied: a proposition can contain more than can be verified; that the pointer stands at a definite point on the scale means *more* than the existence of certain sensations (namely "the existence of a definite fact in the external world").

In answer to this denial of the identity of meaning and verification we must point out the following: 1) This denial is found among physicists only when they leave the actual sphere of physical statements and begin to philosophize. (In physics, obviously, there occur only statements about the properties or behavior of things or events, an express statement concerning their "reality" is not a scientific statement but a philosophical one). In his own sphere the physicist admits entirely the correctness of our standpoint. We mentioned this earlier, and illustrated it in the example of simultaneity. There are

1. *Positivismus und Reale Aussenwelt*, p. 14.

indeed many philosophers who say: of course we can determine only relative simultaneity, but it does not follow from this that there is no such thing as absolute simultaneity, and we continue to believe in it! The falsity of this statement cannot in any sense be demonstrated, but the overwhelming majority of physicists is rightly of the opinion that it is meaningless. However it must be sharply emphasized that in both cases we have to do with the same situation. There is in principle no difference whether I ask: does the proposition "two events are simultaneous" mean more than can be verified? Or whether I ask: does the proposition "the pointer points toward the fifth line on the scale" mean more than can be verified? The physicist who handles these two cases differently is guilty of an inconsistency. He will of course justify himself, believing that in the second case where the question concerns the "reality of the external world" much more is at stake, philosophically. This argument is too vague for us to attach much weight to it, but we shall see presently whether anything lies behind it.

2) It is perfectly true that every statement about a physical object or an event *means* more than is verified, say, by the occurrence of a single experience. It is rather presupposed that the experience occurred under very definite conditions, whose realization of course can only be verified by something given, and it is presupposed further that ever more verifications are possible (confirmations etc.), which in their turn, naturally, reduce to certain given events. In this manner one can and must give an account of illusions of sense, and of error, and it is easy to see how those cases are to be included in which we should say the observer was merely dreaming, that the pointer indicated a definite line, or that he did not carefully observe, etc. The assertions of Blondlot about N-Rays which he believed himself to have discovered were certainly *more* than statements that under certain conditions he had experienced certain visual sensations; and because of this, of course, they could be refuted.² Strictly speaking, the meaning of a proposition about physical objects would be exhausted only by an indefinitely large number of possible verifications, and we gather from this that such a proposition can in the last analysis never be shown to be absolutely true. It is indeed generally recognized that even the most certain propositions of science are always to be taken as hypotheses, which remain open to further refinement and improvement. This has certain consequences for the logical nature of such propositions, but these do not interest us here.

Once again: the meaning of a physical statement is never de-

2. Cf. Planck, *op. cit.*, p. 11.

terminated by a single isolated verification, but it must be thought of in the form: If conditions x are given, the data y occur, where we can substitute an indefinitely large number of conditions for x , the proposition remaining true for each case. (This holds even when the statement refers to a single happening—a historical event, for such an event has innumerable consequences whose occurrences are verifiable). Thus the meaning of every physical statement is lodged finally in an endless concatenation of data; the isolated datum therefore is here uninteresting. Hence if any positivist ever said that the only objects of science are the given experiences themselves he was certainly quite mistaken; what alone the scientists seek are the rules which govern the connections among experiences, and by means of which they can be predicted. No one will deny that the sole verification of natural laws lies in the fact that they yield such true predictions. The common objection that the immediately given, which at most can be but the object of psychology, is thus falsely made into the object of physics is in this way refuted.

3) Most important however: if anyone is of the opinion that the meaning of a proposition is nevertheless not exhausted by what can be verified in the given, but extends far beyond it, he must at least admit that this additional meaning cannot in any way be described, stated, or expressed in language. For let him try to communicate this additional meaning! To the extent to which he succeeds in *communicating* something about this additional meaning he will find that the communication consists in the fact that he has indicated certain conditions which can serve for verification in the given, and thus he finds our position confirmed. Or else he believes himself to have given a meaning, but closer examination shows that his words express only that *something* more is there, concerning whose nature simply nothing is said. And then in fact he has communicated nothing, and his assertion is meaningless. For one cannot assert the existence of something without saying *what* one asserts to exist. This is obvious in the case of our example of the "nucleus of the electron" which in principle lies beyond experience; yet for clarity's sake we shall consider another example which brings out an important point of principle.

I observe two pieces of green paper and determine that they have the same color. The proposition which asserts the sameness of color is verified, among other ways, by the fact that at the same time I have two experiences of the same color. The proposition: "there are two spots of the same color before me now" cannot be reduced to any others; it is verified by the fact that it describes the

given. It has a clear meaning: by virtue of the meanings of the words involved in the proposition, it signifies just the existence of color sameness; and by virtue of linguistic usage the proposition expresses just that experience. Now I show one of these two pieces of paper to a second observer, and ask the question: does he see the green as I do? Is his color experience *like* my color experience? This case differs *in principle* from that just considered. While there the statement was verifiable by the experience of color sameness, here, brief reflection shows, such a verification is simply impossible. Of course the second observer, if he is not color blind, calls the paper *green*, and if I describe this green to him more closely by saying: it is yellower than this carpet, but bluer than the billiard cloth, darker than this plant, etc., he will find the same to hold in his experience, i.e. he will agree with my statements. But even if all his judgments about color agree entirely with mine I cannot infer from this that he experiences this same quality. It could be the case that on looking at the green paper he would have a color experience which I would call "red," that on the other hand, when I see red he would see green, calling it "red" of course, and so on. Indeed it might even be that my color sensations correspond to his tone experiences, or to any other data. It would nevertheless forever be impossible to discover these differences, between his and my experience. We should always understand one another perfectly, and could never be of different opinions regarding our environment if (and this is the only assumption that need be made) the inner *order* of his experiences agreed with that of mine. There is no question here of their "quality," all that is required is that they can be arranged into systems in the same manner.

All this is indeed admitted, and philosophers have often pointed it out. But, for the most part, while they have allowed that such subjective differences are theoretically possible, and that this possibility raises a very interesting question of principle, they have held it to be "highly probable" that the other observer and I do in fact have the *same* experience. But, we must point out, the statement that different individuals have the same experience has its sole verifiable meaning in the fact that all their assertions (and of course all the rest of their behavior) exhibit certain agreements. Hence it follows that the statement *means* nothing but this. It is only to express the same thing in a different manner if we say that we here are concerned with the similarity of two system-orders. The proposition that two experiences of different subjects not only occupy the same place in the order of a system but are, in addition, qualitatively similar has no meaning for us. Note well, it is not false, but meaningless: we have no idea what it means.

Experience shows, however, that most people find it very difficult to agree to this. We must make it clear that here we have to do with a logical impossibility of verification. It makes good sense to speak of the similarity of data in the *same* consciousness, for it can be verified through an immediate experience. But if we want to speak of the similarity of data in *different* consciousnesses we are dealing with a new concept, which has to be newly defined. For the statements in which it occurs are no longer verifiable in the old manner. The new definition is simply the similarity of all relevant reactions of the two individuals; we can find no other. Most people, of course, believe that no definition is required here; one knows the meaning of "similar" without it, and the meaning in both cases is the same. But, to recognize this as a mistake we need only remember the concept of simultaneity, in which the situation is exactly the same. To the concept of "simultaneity at a place" there corresponds the concept of "similarity of the experiences of the same individual," and to "simultaneity at different places" there corresponds the notion of "similarity of the experiences of different persons." The second notion is, with respect to the first, a new concept in each case, and must be specially defined. We can no more indicate a directly experientiable quality which would verify the similarity of two greens in different consciousnesses than we can for simultaneity at different points: *both* must be determined by a system of relations.

Many philosophers have sought to overcome the difficulty which seemed to confront them here by all sorts of speculations and ideal experiments, speaking, say, of a universal consciousness comprehending all individuals (God) or thinking perhaps that by means of some artificial connection of the nervous systems of two individuals the sensations of one would be made accessible to the other, and thus be rendered comparable. But of course all this is in vain. For even in this fantastic way in the end only the contents of one and the same consciousness would be directly compared. The question, however, concerns the possibility of the comparison of qualities in so far as they belong to different, and *not* the same, consciousnesses.

Hence it must be granted that a statement concerning the similarity of the experiences of two persons has no other *communicable* meaning than a certain agreement of their reactions. Of course everyone is free to believe that such a proposition also possesses another more direct meaning; but so much is sure: no such meaning is verifiable, and one cannot in any way state or show what this meaning is. Hence it follows that such a meaning simply cannot in any way become the object of discussion. We can say absolutely

nothing about it, and it can in no way enter into any language by means of which we communicate with one another. And what has, I hope, become clear here holds generally. We can understand in a proposition only what it communicates, and a meaning is communicable only if it is verifiable. Since propositions are nothing but vehicles for communication we can include in their meanings only what they can communicate. For this reason I should maintain that "meaning" can mean only "verifiable meaning."

But even if someone should insist that there is a non-verifiable meaning this would not help in the least. For *such* a meaning can in no way enter into anything he says or asks, or into what we ask him or answer him. In other words: if there were any such thing, all our utterances, arguments, and modes of behavior would remain quite unaffected by it, whether we were dealing with daily life, ethical or aesthetic attitudes, with science or philosophy. Everything would remain as if there were no unverifiable meaning. For if there were a difference this very difference would make it verifiable.

This is a serious situation, and we must insist that it be taken seriously. Above all one must guard against confusing this logical impossibility with an empirical incapacity, as if some technical difficulty and human imperfection were responsible for the fact that only what is verifiable can be expressed, and as if there were still some rear entrance through which an unverifiable meaning might slip in and make itself evident in our discourse and behavior. No! The incommunicability is absolute; he who believes (or rather imagines that he believes) in a non-verifiable meaning must nevertheless admit that with respect to it only *one* course is open to him: utter silence. Neither he nor we gain anything, no matter how often he asserts: "yet there is a non-verifiable meaning!" For this statement itself is devoid of meaning, it tells us nothing.

3. WHAT IS THE MEANING OF "REALITY," OF "EXTERNAL WORLD"?

We are now prepared to apply what has been said to the so-called problem of the reality of the external world.

We ask: What is the meaning of the realist's assertion, "there is an external world?" or what is the meaning of the statement (attributed to the positivist by the realist) "there is no external world"?

In order to answer the question it is of course necessary to make clear the meanings of the words, "there is," and "external world." We begin with the first. "There is an x" means the same as "x is

real" or "x is actual." Hence what do we mean when we attribute reality to an object? It is an old, very important logical or philosophical insight, that the proposition "x is real" is of quite a different sort from a proposition which ascribes some *property* to x (e.g. "x is hard.") In other words: reality or existence is not a predicate. The statement "the dollar in my pocket is round" has a completely different logical form from that of the statement "the dollar in my pocket is real." In modern logic this distinction is expressed by means of two very different symbolisms, but it was already clearly drawn by Kant, who, as we know, in his critique of the so-called ontological proof of God's existence, correctly found the source of error of this proof in the fact that existence is treated as a predicate.

In daily life we constantly speak of reality or existence, and for this reason it cannot be very difficult to discover its meaning. In a law-suit it is often necessary to determine whether a certain document actually exists, or whether it is merely wrongly asserted to exist; and it is not altogether unimportant to me whether the dollar in my pocket is only imagined or is real. Now everyone knows how such an assertion of the reality of something is verified, and there cannot be the slightest doubt that the reality of the dollar is verified and verified only by the fact that, as a result of certain suitable manipulations, I obtain certain sensations of touch and sight upon whose presence I am accustomed to say "this is a dollar." The same holds of the document, except that in this case we would content ourselves with certain statements of others who claim to have seen the document, i.e. to have had perceptions of a very definite sort. And the "statements of others" consist again of certain acoustic, or, if they were written statements, of certain visual perceptions. No special analysis is required of the fact that the occurrence of certain sense-perceptions among the data always constitutes the sole criterion of statements concerning the reality of a "physical" object or event in everyday life, as well as in the most subtle propositions of science. That there are okapis in Africa can be determined only by the fact that such animals are observed there. However it is not necessary that the object or event "itself" be perceived. We can, for example, imagine the existence of a transneptunian planet to be inferred with as much certainty from the observation of perturbations as from the direct perception of a spot of light in the telescope. The reality of atoms furnishes us with another example. And the same is true of the other side of the moon.

It is of great importance to realize that the occurrence of a definite single experience in the verification of a proposition about

nature is often not accepted as verifying the proposition, but that throughout we are concerned with uniformities, with connections obeying natural laws: in this manner genuine verifications are distinguished from illusions and hallucinations. When we say of any object or event—which must be designated by a description—that it is *real* this means that there exists a very definite connection between perceptions or other experiences, that under certain conditions certain data appear. Such a statement is verified in this manner alone, and therefore it has only this communicable meaning.

This was in principle already formulated by Kant, whom no one would charge with "positivism." Reality for him is a category, and if we apply it in any way, and say of an object that it is real this means, according to Kant, that it belongs to a collection of perceptions connected according to some natural law.

We see that for us (as for Kant; and the same applies to every philosopher who understands his business) it is simply a matter of saying what it means in everyday life or in science to ascribe real existence to a thing. Our task is in no sense that of correcting the statements of everyday life or of science. I must confess that I should repudiate and consider absurd any philosophical system that involved the assertion that clouds and stars, mountains and sea were unreal, that the chair by the wall ceased to exist whenever I turned my back. Nor do I credit any serious thinker with any such statement. It would for example surely be quite a perverse interpretation of Berkeley's philosophy to see in it such a system. He too didn't deny the reality of the world of bodies, but merely tried to explain what we mean when we ascribe reality to it. He who says that unperceived ideas exist in God's mind does not thereby deny their existence but seeks to understand it. John Stuart Mill himself did not wish to deny the reality of physical bodies, but to clarify it, when he declared them to be "permanent possibilities of sensation," though in my opinion his manner of expression was very ill chosen.

Therefore if one understands by "positivism" a view which denies the reality of bodies I must declare positivism to be simply absurd. But I do not believe that such an interpretation of positivistic views would be historically just, at least so far as their ablest representatives are concerned. Be this as it may, we are not concerned with it, but with the view itself. And in this connection we have seen that our principle, that the meaning of a proposition is identical with its verification, leads to the insight that the assertion of the reality of a thing is a statement regarding a regular connection of experiences. It does not lead to the conclusion that the assertion is false. (There-

fore reality is not denied to physical things in favor of sensations.)

But opponents of the view just expounded are not at all satisfied with this. They would probably offer the following answer: "You do, indeed, admit the reality of the physical world, but, as it seems to us, only verbally. You simply *call* that real which we would describe as a mere conceptual construction. When *we* use the word reality we mean by it something quite different from what you mean. Your definition of reality refers back to experiences; but we mean something altogether independent of experience. We mean something which possesses that same independence evidently attributed by you to the data alone, in the sense that you reduce everything to them as to something not further reducible."

Even though it would suffice as a rebuttal to invite our opponents to reconsider how existential propositions are verified, and how verification and meaning are connected, I think it necessary to consider the psychological attitude from which this argument arises, and to request attention for the following remarks, which may result in a modification of that attitude.

We ask first whether on our view a reality is attributed to a "content of consciousness" which is denied to a physical object. Thus we inquire whether the assertion of the reality of a feeling or a sensation has a different meaning from that of the reality of a physical body? This can mean for us only: do we have different modes of verification in each case? The answer is: No! In order to make this clear it is necessary to undertake some slight analysis of the logical form of existential propositions. The general logical insight that an existential proposition about a datum is possible only if it is referred to by a description, and not if it is given by direct indication holds of course for "data of consciousness." (In the language of symbolic logic this is expressed by the fact that an existential proposition must contain an "operator.") In B. Russell's symbolism, for example, an existential proposition has the form $(\exists x) fx$, or in words: "there is an x having the property f ." The combination of words "there is an a ," where " a " is the proper name of an object directly present, and therefore means the same as "this," is meaningless, and cannot be written in Russell's symbolism. We must attain the insight that Descartes' statement "I am"—or, to use a less misleading formulation, "my contents of consciousness exist"—is simply meaningless; it expresses nothing and contains no knowledge. This is because "contents of consciousness" occurs in this context simply as a *name* for the given: no characteristic is expressed whose presence could be tested. A proposition only has meaning, is verifiable only, if I can

state the conditions under which it would be true and under which it would be false. But how shall I describe the conditions under which the proposition "my contents of consciousness exist" would be false? Every attempt would lead to absurdity, for example to such statements as "it is the case that nothing is the case," or something of the sort. Therefore it is self-evident that I cannot describe the conditions which make the proposition true (try to do so!). There is indeed also no doubt that Descartes failed to gain any knowledge through his statement, and was no wiser at the end than he was at the beginning of his inquiry.

No, a question concerning the reality of an experience makes sense only if its reality can significantly be *doubted*. I can for example ask: Is it really true that I felt happy upon hearing that news? This can be verified or falsified in exactly the same way as, say, the question: is it true that Sirius has a satellite (that this satellite is real)? That on a given occasion I experienced pleasure can for example be verified by examining the statements of others concerning my behavior at the time, by finding a letter written by me at the time, or even simply by a veridical memory of the emotion experienced. Hence there is here absolutely no difference in principle: to be real always means to stand in a definite relationship to the given. And this also holds, say, for an experience at this very moment. For example, I can significantly ask (say in the course of a physiological experiment): do I, or do I not, experience a pain at this moment? Observe that here "pain" does not function as a proper name for a this-here, but represents a concept which stands for a describable class of experiences. Here, too, the question is answered by determining that an experience having certain describable properties occurs in conjunction with certain conditions (experimental conditions, concentration of attention etc.). Such describable properties would be, for instance, similarity to an experience occurring under certain other conditions; the tendency to produce certain reactions, etc.

No matter how we twist and turn: it is impossible to interpret an existential proposition except as a statement regarding a connection of perceptions. It is reality of *the same* sort that one must attribute to data of consciousness and, say, to physical events. Hardly anything in the history of philosophy has produced greater confusion than the attempt to distinguish one of the two as true "being." Wherever the word "real" is significantly used it means one and the same thing.

The opponent of this view will perhaps not feel that what has

been said upsets his own view in any way, but will be of the impression that the preceding arguments presuppose a point of departure he is from the outset unwilling to adopt. He must indeed grant that a decision regarding the reality or unreality of a fact in experience is always made in the way described, but he claims that in this way one arrives only at what Kant called *empirical* reality. This method defines the realm of the observations of everyday life and of science, but beyond this limit lies something more, the *transcendent* reality, which cannot be deduced by strict logic, and therefore is not a postulate of the understanding, but is perhaps a postulate of *reason*. This is the only real *external world*, and it alone is relevant to the philosophical problem of the existence of the external world. Thus our discussion leaves the question of the meaning of the word "reality," and turns to that of the phrase "external world."

The phrase "external world" is evidently used in two different ways: first in the language of everyday life, and secondly as a technical term in philosophy.

Wherever it occurs in daily life it has, as do most of the expressions used in practical affairs, a sensible meaning which can be stated. In opposition to the "inner world," which includes memories, thoughts, dreams, desires, feelings, the external world is simply the world of mountains and trees, of animals and men. Every child knows what is meant when we assert the existence of definite objects of this world; and we must insist that it really means absolutely nothing *more* than what the child knows. We all know how to verify the statement, say, that "there is a castle in the park outside the city." We act in certain ways and then if certain clearly describable facts are experienced we say: "Yes, there really is a castle there," otherwise we say the statement was wrong, or a lie. And if someone asks us: "Was the castle also there at night, when no one saw it?" We answer: "Undoubtedly! For it would have been impossible to build it since this morning; furthermore the condition of the building shows that not only was it there yesterday, but for hundreds of years, hence before we were born." Thus we possess quite definite empirical criteria with which to determine whether houses and trees existed when we did not see them, and whether they already existed before our birth, and whether they will exist after our death. This means that the statement that those things "exist independently of us" has a clear verifiable meaning, and is obviously to be affirmed. We can very well distinguish empirically things of this sort from those that are only "subjective" and

"dependent upon us." If, for instance, because of some visual defect I see a dark spot when I look at the adjacent wall I say that the spot is there only when I look at it, but I say that the wall is there even when I do not look at it. The verification of this distinction is indeed quite easy, and both these statements say just what is contained in the verifications, and nothing else.

Hence if the phrase external world is taken with the signification it has in everyday life then the question regarding its existence is simply the question: are there in addition to memories, desires and ideas also stars, clouds, plants, animals, and my own body? We have just seen that it would be simply absurd to answer this question in the negative. There are, quite evidently, houses, clouds, and animals existing independently of us, and I said above that any thinker who denied the existence of the external world in this sense would have no claim on our respect. Instead of telling us what we mean when we speak of mountains and plants he would convince us that there aren't any such things at all!

But science! Does it, in opposition to common sense, mean something other than things like houses and trees when it speaks of the external world? It seems to me that nothing of the sort is the case. For atoms and electric fields, or whatever the physicist may speak of, are just what constitute houses and trees according to their theory; and therefore the one must be real in the same sense as the other. The objectivity of mountains and clouds is exactly the same as that of protons and energies—these latter stand in no greater opposition to "subjectivity," say to feelings and hallucinations, than do the former. In fact we are at last convinced that the existence of even the most subtle "invisible things," assumed by the scientist, is, in principle, verified exactly as is the reality of a tree or a star.

In order to settle the dispute concerning realism it is of very great importance to draw the physicist's attention to the fact that his external world is simply *nature*, which also surrounds us in daily life, and not the "transcendent world" of the metaphysician. The distinction between the two is again especially clear in Kant's philosophy. Nature, and everything of which the physicist can and must speak belongs, according to Kant, to empirical reality, and what that means is (as we have already said) explained by him in just the way that it must be by us. Atoms in Kant's system have no transcendent reality, they are not "things in themselves." Hence the physicist cannot appeal to the Kantian philosophy; its arguments lead only to the empirical external world which we all acknowledge,

not to a transcendent world; his electrons are not metaphysical entities.

Nevertheless many scientists speak of the necessity of assuming the existence of an external world as a metaphysical hypothesis. To be sure, they do not do this within their own science (even though all the necessary hypotheses of a science ought to be found *within* it), but only where they leave this realm and begin to philosophize. In fact the transcendent external world is something dealt with only in philosophy, never in a science, nor in daily life. It is simply a technical term into whose meaning we must now inquire.

How is the transcendent or metaphysical external world distinguished from the empirical world? In philosophical systems it is thought of as somehow standing behind the empirical world, where the word "behind" indicates that it cannot be *known* in the same sense as can the empirical world, that it lies beyond a boundary which separates the accessible from the inaccessible.

This distinction has its original source in the view, formerly held by most philosophers, that in order to know an object it is necessary to perceive it directly; knowledge is a sort of intuition, and is perfect only when the object is directly present to the knower as a sensation or feeling. Hence according to this view what cannot be immediately experienced or perceived remains unknowable, incomprehensible, transcendent; it belongs to the realm of things in themselves. Here there is simply a confusion, which I have revealed elsewhere many times, between knowledge and mere acquaintance or experience. But modern scientists will certainly be guilty of no such confusion. I do not believe that any physicist is of the opinion that knowledge of the electron consists in the fact that it enters bodily into the consciousness of the investigator through an act of intuition. He will, rather, hold the view that for complete knowledge it is only necessary to state the laws governing the behavior of the electron so exhaustively that all formulae into which its properties enter in any way are completely confirmed by experience. In other words: the electron, and equally all physical realities are *not* unknowable things in themselves, they do not belong to transcendent reality, if this is characterized by the fact that it contains the unknowable.

Therefore we again come to the conclusion that all physical hypotheses can refer only to *empirical* reality, if by this we mean the knowable. In fact it would be a self-contradiction to assume hypothetically something unknowable. For there must always be definite *reasons* for setting up an hypothesis, the hypothesis has a certain function to fulfill. Therefore what is assumed in the hypothesis must

have the property of fulfilling this function, and must be so constituted that it is justified by those reasons. But in just this way certain statements are made regarding the assumed entity and these express our *knowledge* of it. And of course they contain *complete* knowledge of it. For *only* that can be assumed hypothetically for which there are grounds in experience.

Or does the "realistic" scientist want to designate the theory of objects which are not directly experienced as a metaphysical hypothesis for some other reason than that of their unknowableness, which is not under consideration at all? To this he will perhaps answer affirmatively. In fact we learn from numerous statements in the literature that the physicist does not add any statement of its unknowable character to his affirmation of a transcendent world; quite the contrary, he is rightly of the opinion that the nature of the extra-mental things is correctly represented by his equations. Thus the external world of the physical realist is not that of traditional metaphysics. He uses the technical term of the philosopher, but what he means by it has appeared to us to be nothing but the external world of everyday life, whose existence no one, not even the "positivist," doubts.

What, then, is that other reason which leads the "realist" to conceive his external world as a metaphysical hypothesis? Why does he want to distinguish it from the empirical external world which we have described? The answer to this question leads us back again to an earlier point in our discussion. The physical "realist" is quite satisfied with our description of the external world except in one point: he does not believe that we have granted it enough *reality*. It is not because it is unknowable, or for any such reason that he thinks his "external world" differs from the empirical, but only because a different, higher reality pertains to it. This often shows itself in his language; the word "real" is frequently reserved for that external world in contrast with the merely "ideal," "subjective" contents of consciousness, and in opposition to mere "logical" constructions, "positivism" being reproached with the attempt to reduce reality to such logical constructs.

But the physical realist, too, feels obscurely that, as we know, reality is not a "predicate," hence he cannot well pass from our empirical to his transcendent external world by ascribing to it, in addition to the characteristics which we also attribute to physical objects, the characteristic of "reality." Nevertheless he expresses himself in this way; and this illegitimate leap, which carries him beyond the realm of significance, would indeed be "metaphysical," and will be felt by him to be such.

Now we see the situation clearly, and can base our final judgment on the foregoing considerations.

Our principle that the truth and falsity of all statements, including those concerning the reality of a physical object, can be tested only in the "given," and that *therefore* the meaning of all propositions can be formulated and understood only with the help of the given—this principle is mistakenly conceived as if it asserted or presupposed that only the given is real. Therefore the "realist" feels impelled to contradict this principle and to establish the contrary: that the meaning of an existential proposition is in no sense exhausted by mere propositions of the form "under these definite conditions that definite experience will occur" (those propositions constituting an infinite set according to our view), but that their meaning lies *beyond* all this in something else, which is to be designated, say, as "independent existence," as "transcendent being," or similarly, and to which our principle fails to do justice.

And here we inquire: Well, how *do* you do justice to it? What do these phrases "independent existence" and "transcendent being" *mean*? In other words: what verifiable difference does it make in the world whether transcendent being pertains to an object or not?

Two answers are given to this question. The first is that it makes a very great difference. For a scientist who believes in a "real" external world will feel and work very differently from one who believes himself to be "describing sensations." The former will observe the starry heavens, whose view makes him conscious of his own puny nature, and the incomprehensible sublimity and grandeur of the world with very different feelings of fervor and awe from the latter, for whom the most distant galactic systems are merely "complexes of his own sense-impressions." The former will devote himself to his task with an inspiration and will feel a satisfaction in the knowledge of the external world which is denied to the latter, because he believes himself to be dealing only with his own constructions.

In answer to this we offer the following comment. Let us assume that somewhere in the behavior of two scientists there does exist a difference such as has been described here. Such a difference would of course be an observable difference. Suppose now somebody insists on expressing this difference by saying that one of the scientists believes in a real external world and the other does not. In that event the *meaning* of this statement would consist solely in what we observe in the behavior of the two men. That is, the words "absolute reality" or "transcendent being," or whatever expressions we

might choose to employ, mean here simply certain states of feeling, which occur in the men when they observe the world, or make statements about it, or philosophize. It is, indeed, the case that the use of the words "independent existence," "transcendent reality," etc., is simply and only the expression of a feeling, of a psychological attitude of the speaker (this, moreover, may, in the final analysis, be true of all metaphysical propositions). If someone assures us that there is a real external world in the trans-empirical sense of the word, he of course believes himself to have communicated some truth about the world. But in actual fact, his words express something very different; they merely express certain feelings which give rise to various linguistic and other reactions on his part.

If this self-evident point requires any further emphasis I should like to call attention to the fact—and with the greatest stress on the *seriousness* of what is said—that the non-metaphysician is not distinguished from the metaphysician by, say, the absence in him of those feelings which the other expresses in terms of the statements of a realistic philosophy, but only by the fact that he recognizes that these statements simply do not have the meaning they seem to have, and are therefore to be avoided. The non-metaphysician will express these same feelings in a *different* way. In other words: the contrast drawn in the first answer of the "realist" between the two types of thinkers was misleading and unjust. If one is unfortunate enough not to feel the sublimity of the starry heavens something other than a logical analysis of the concepts of reality and external world is to be blamed. To assume that the opponents of metaphysics are unable justly to comprehend, say, the greatness of Copernicus, because in a certain sense the Ptolemaic view represents the empirical facts as well as the Copernican, seems to me to be as strange as to believe that the "positivist" cannot be a good parent because according to his theory his children are merely complexes of his own sense-impressions, and it is therefore senseless to take measures for their welfare after his death. No: the world of the non-metaphysician is the same world as that of all other men; it lacks nothing which is needed to bestow meaning on all the propositions of science and the whole conduct of life. He merely avoids adding meaningless statements to his description of the world.

We come now to the *second* answer which can be given to the question concerning the meaning of the assertion of a transcendent reality. It consists in granting that it makes no difference at all for experience whether or not one assumes something further to exist behind the empirical world, that metaphysical realism therefore

cannot be tested and is actually unverifiable. Hence one cannot indicate any further what is meant by this assertion; but nevertheless it does mean something, and this meaning can be understood even without verification.

This is nothing but the view, criticized in the previous section, that the meaning of a proposition has nothing to do with its verification, and we need only apply our earlier general criticism to this special case. Therefore we must say: you designate here by existence or reality something which simply cannot in any way be given or explained. Yet despite this you believe that those words make sense. We shall not quarrel with you over this point. But this much is certain: according to the admission just made this sense can in no way become evident, it cannot be expressed in any written or spoken communication, nor by any gesture or conduct. For if this were possible we should have before us a verifiable empirical fact, and the world would be *different* if the proposition "there is an external world" were true, from what it would be if it were false. This difference would then constitute the meaning of the phrase "real external world," hence it would be an empirical meaning; that is, this real external world would again be only the empirical world, which, like all human beings, we also acknowledge. Even to speak of any other world is logically impossible. There can be no discussion concerning it, for a non-verifiable existence cannot enter meaningfully into any possible proposition. Whoever still believes—or believes himself to believe—in it must do so only silently. Arguments can relate only to what can be said.

The results of our discussion may be summarized as follows:

1) The justified unassailable nucleus of the "positivistic" tendency seems to me to be the principle that the meaning of every proposition is completely contained within its verification in the given.

But this principle has seldom been clearly apparent within that general tendency, and has so frequently been mixed with so many untenable propositions that a logical purification is necessary. If one wishes to call the result of the purification positivism, which would perhaps be historically justifiable, at least a differentiating adjective must be added. Sometimes the term "logical" or else "logistic positivism" is used.³ Otherwise the designation "consistent empiricism" seems to me to be appropriate.

3. See the article by Blumberg and Feigl in the *Journal of Philosophy*, Vol. XXVIII (1931), the article by E. Kaila in the *Annales Universitatis Aboensis*, Vol. XIII, Ser. B. (Turku, 1930), and the one by A. Petzäll in the *Skriften der Universit t G teborg*.

2) This principle does not mean and does not imply that only the given is real. Such an assertion does not make sense.

3) Hence also, consistent empiricism does *not* deny the existence of an external world; it merely points out the empirical meaning of this existential proposition.

4) It is not a "Theory of As If." It does not assert that everything behaves as if there were physical independent bodies; but for it, too, everything is real which the non-philosophizing scientist calls real. The subject-matter of physics is *not* sensations, but laws. The formulation, used by some positivists, that bodies are only "complexes of sensations" is therefore to be rejected. What is correct is only that propositions concerning bodies are transformable into equivalent propositions concerning the occurrence of sensations in accordance with laws.

5) Hence logical positivism and realism are not in opposition; whoever acknowledges our fundamental principle must be an empirical realist.⁴

6) An opposition exists only between the consistent empiricist and the metaphysician, and indeed no more against the realist than against the idealist metaphysician (the former has been referred to in our discussion as "realist" in quotation marks).

7) The denial of the existence of a transcendent external world would be just as much a metaphysical statement as its affirmation. Hence the consistent empiricist does not deny the transcendent world, but shows that both its denial and affirmation are meaningless.

This last distinction is of the greatest importance. I am convinced that the chief opposition to our view derives from the fact that the distinction between the falsity and the meaninglessness of a proposition is not observed. The proposition "Discourse concerning a metaphysical external world is meaningless" does *not* say: "There is no external world," but something altogether different. The empiricist does not say to the metaphysician "what you say is false," but, "what you say asserts nothing at all!" He does not contradict him, but says "I don't understand you."

4. On this point and on the entire subject of the present essay the reader is also referred to Hans Cornelius' "Zur Kritik der Wissenschaftlichen Grundbegriffe," *Erkenntnis*, Vol. II. The formulations there are, however, open to objections. See also the splendid remarks in Chapter X of Phillip Frank's fine work, *Das Kausalgesetz und seine Grenzen*, and Rudolf Carnap's *Scheinprobleme der Philosophie*.