II.—THE EPISTEMOLOGY OF EVOLUTIONARY NATURALISM.¹

By R. W. SELLARS.

WHAT I wish to do in the pages that follow is to make reasonably clear just what knowledge about the physical world should mean to the critical realist. If the naturalist has a definite conception of the character of human knowledge, he will be less likely to fall into naïve substance-theories and to suppose that the very stuff and process of the physical world is open to his cognitive gaze.

Critical realism is a form of physical realism. Like common sense, it accepts the belief that there are physical things; and, like enlightened common sense, its idea of physical things is moulded by the conclusions of science. Now the common character of all modern realisms is the principle that the objects of knowledge do not depend, for either their being or their nature, upon the knowledge of them. To know is not to *form* the reality known out of *a priori* and *a posteriori* material of a mental provenance, as Kant held; but to gain information about it as it exists in its own circle of being. Being is one thing, and knowledge is quite another sort of thing, a function of mind in causal relation to that which is known. We shall have to amplify and explain these statements, pointing out the difference between existents and subsistents and showing that it is only for existents that a causal relation is implied in the possession of knowledge. But there can be little doubt, I take it, that knowledge implies this independence on the part of the reality known. We think of knowing as an event in the history of a mind, an event which does not modify the reality known. For if modified, how could we possibly know the reality as it is?

At the level of common sense, knowledge is *on the whole* regarded as an apprehension by the percipient of the things about him. He is aware of them. They are open to his inspection; they come into, and pass from, his field of experience. These sensible, physical things are regarded as

¹A chapter of a book to be entitled *Evolutionary Naturalism*, and dealing with the main categories of our knowledge about nature.

independent of this awareness and relatively permanent; therefore common and co-real. It is within this setting and in relation to these meanings that the idea of knowledge is formed.

This structure of the field of experience and these meanings cannot be mere accidents. They must have their deep-lying causes. If physical realism is correct and there are physical existents affecting the percipient organism, we can readily understand why these realistic meanings have developed within experience. Realism and realistic meanings imply each other. As a matter of fact, there is hardly a system of philosophy which is not to some degree realistic. Subjective idealism is not in favour, though it is often discarded rather than refuted. What critical realism seeks to do is patiently and persistently to develop an idea of knowledge which fits in with the obvious position and circumstances of human beings.

Let us, first of all, see what common sense takes knowledge to be. We can go on to modify it and improve it as a wider reflexion demands. Logic and psychology can be called to our aid in this task of interpretation and improvement.

The assumption that knowledge is an awareness of objects independent of this awareness is an inevitable reflexion of the structure of the individual's field of experience. If things are external and co-real, and I just 'see' them, my seeing them makes no difference to them and is primarily an event which happens to me. The fact that my sense-organs are stimulated so that the action is *from the things to me*; as well as the fact that I seem able to change things only through the overt action of my organism, confirms me in the belief that this awareness does not modify its objects.¹ Thus common sense would, I think, hold that I perceive this brown-covered book on my desk just as it is, although not exhaustively. There is more to the book than I perceive at any one time, yet in veridical perception I do not perceive falsely. The book is, in part, the content of which I am aware. Yet, in spite of this confidence, enlightened common sense is puzzled by the description of the physical thing which science gives. How can colour be subjective? And what is the relation of these imperceptible atoms to the sensuous object perceived?

Now when we call logic and psychology to our aid, we find that perception is not the simple awareness of an external object it appears to be on the surface. The more sensuous

¹ The informed reader will note that I am touching upon the question of relations. I am not in sympathy with the usual general approach to the question.

part of the content, which we may call the sense-datum without being held guilty of sensationalism, is penetrated by meanings and even interpreted by concepts. I perceive this object as a *book*. There is judgment at work, and universals are being used. Is psychology wrong when it asserts that perception involves mental activities and a synthetic unity of sense and meaning? Furthermore, does not this particular perception arise within the general setting of what may be called the perception of the external world? The complex experience called 'perceiving a book' can be analysed into a *complex datum interpreted by concepts as being an external, permanent thing of the book type, of which I am actively aware*. And this awareness is the empirical subject-self using these concepts and compresent with the complex datum. The awareness may sink in consciousness to compresence in consciousness of an interpreted datum and the self. And it is well to bear in mind that the self has different levels and intensities.

One of the points the critical realist wishes to make is that there is a profound truth in the outlook of common-sense realism despite its inadequacy. The plain man is outward-looking, and accepts results at their face value. The sense of thinghood in the external world dominates his perception. The justified function of idealism, so far as it speaks for real physiological, psychological, and logical facts, is a war against the simplicity of common sense, its ignorance of processes, its belief in an abrupt givenness of physical things. Unfortunately, it has usually gone beyond this toward the denial that we can know physical reality, either with the frankness of a Berkeley or with the subtle scepticism of objective idealism. Critical realism is as much a physical realism as is common sense; but it is to common sense much as the chemist is to the man who works in a chemical factory. In other words, critical realism is an epistemology which seeks to do justice to all the facts which bear upon our final interpretation of the nature and conditions of knowledge. Reflexion soon convinces the thinker that physical existents cannot appear in this literal way within the field of experience, and that, because of this fact, knowledge of the physical world cannot be an immediate awareness of it. These contrasts will become clearer as we proceed. The query we are developing is this: If we do possess knowledge of the physical world, what must be the nature of this knowledge, seeing that the contents we apprehend are non-physical?

There are two distinguishable elements in perception: *the affirmation of a physical thing, and the awareness of the*

complex content which is somehow identified with it. Thus we perceive the physical existent affirmed by apprehending the given characters presented. It is, we feel, this kind of a thing that exists. These characters are its qualities, and to apprehend the qualities is to apprehend it. Content apprehended and existent seem to us, as yet, inseparable. The content of perception and the object of perception are fused. Things are apparently given to inspection.

But logic and psychology show us that realistic meanings and modes of behaviour—the two, by the way, are closely related—attach themselves to the presentational content given to the self in perception. It is in this way that the rise of the naïve category of thinghood can be explained. Things are independent, co-real with the individual, spatial, and possessed of dynamic capacities. They are objects to be reckoned with because they are full of consequences for our life. All these empirical predicates must be true of an object before it can be regarded as physical. The development of this outlook is genetically traceable, and no modern psychologist would feel much difficulty before its analysis. The point to note is, that these predicates are attached to a presentational content; and so the sensible thing is made. We are aware of the content fused with realistic meanings and naturally assume that we are aware of the physical thing affirmed.

But a critical study of the internal and external conditions of perception has revealed to reflexion that common sense was too hasty. The *content* of perception, which has been identified with the *object* of perception or the physical thing affirmed, is found to be numerically distinct from it and essentially a function of the percipient organism under stimulation. The physiological conditions of perception are now well known. But their recognition does not imply acosmism of the Berkeleian sort. It does signify, however, that the direct awareness within the field of experience of the physical thing is impossible. The content of perception is not the physical thing affirmed as co-real with the percipient organism. Or, to put the result in still another way, the physical existent is not a sensible thing.

We may summarise our conclusion as follows: *No motive has thus far entered to cause us to doubt the existence of physical realities co-real with the percipient self, but reflexion has discovered that the objective content with which we at first clothe these acknowledged realities is intra-organic.* In other words, we can no longer believe that we can inspect the very nature or specific qualities of the physical existent. The

question is beginning to arise in our minds whether physical existents, themselves, have a sensible nature. May not the fusion of affirmation and content, at the level of perception, have entirely misled us? May it not have suggested too simple an idea of the nature of our knowledge, on the one hand, and caused us to think of the existent as something *like* the content, on the other? It is thus very natural to think of the physical existent as an imperceptible sensible thing. The nature of our knowledge of the physical world has become an engrossing problem.

But let it be noted that neither subjective idealism nor agnosticism is justified by this result of reflexion. And I hope that philosophy has got beyond the stage of jumping at hasty conclusions. What is needed is a patient analysis which goes forward step by step *under the guidance of the facts*. The facts which break down common-sense realism work within a realistic set of affirmations and attitudes. Hence, there is no movement in the direction of subjective idealism. *On the other hand, only if knowledge must be an awareness of the physical existent, itself, is agnosticism implied.* But what right has a thinker to shut out other possibilities by such a dogmatic assumption? It is far more logical to suppose that knowledge of the physical world is not an apprehension of it in the manner of naive realism, than that we do not possess knowledge. Agnosticism is a counsel of despair. It is obvious that the nature of knowledge has come up for radical investigation.

Who can deny that reflexion partly finds present, partly extends, the distinction between the realm of consciousness as a field of contents and processes somehow connected with the organism, and the acknowledged world of which any such organism is only a part? And patient reflexion only develops this contrast.¹ The actual *content* of all *apprehended objects* turns out to be non-physical. It is subjective, personal, bound up with the particular percipient organism. In a word, it is what we are accustomed to call psychical.

The paradox of the situation is that what is apprehended discovers itself to consist of characters which have no substantiality. Discriminate as we will, we find only sensible characters and meanings; and yet we feel that the reality which surrounds us cannot be any sum or organisation of such elements. Where is the executive push of things which makes them have effective consequences? The psychical characters do not consume wood or shatter fortresses

¹ Cf. *Critical Realism*, ch. iii.

into fragments. We tend to believe that we grasp an external reality in an intuitive way so that its councils and pulsating energy are open to us, and the tragedy is that what we grasp has no such dynamic power. Being escapes us. And what is true of common-sense realism is equally true of scientific realism. What are mass and energy but quantities? And are quantities self-sufficient realities? The very stuff and being of the physical world again eludes us, while we are left with contents hanging in the air, as it were, and yet masquerading at the least excuse as self-existent and substantial.¹ We are led to ask ourselves whether being can be given. Is not the sensuous *content of perception* a peculiar substitute for the *object of perception*? The object of common sense breaks down for reflexion into a self-existent reality, which cannot be given to awareness and a complex datum which is so given.

But this discovery that only subjective contents are given is a fairly common possession of modern philosophy. It must be remembered, however, that these subjective contents of perception are objective within consciousness, that they are subjective only in the sense that they are in the individual percipient and not a part of the physical environment to which the conscious individual is reacting. Nor within consciousness need these contents be regarded as dependent upon the conscious self's awareness of them. Self-aware-of-content is a complex of a unique sort, the parts of which are together; and as these parts are contents they do not modify one another. At any one time, I am in the field of what is given together. *The being of the content is not its being perceived, and yet the content is psychical and within consciousness.* But this conclusion only excludes naïve realism. It proves that only mental contents can be given in consciousness; it does not prove that we can know only phenomena. The mistake of philosophy has been to confuse these two principles; or, rather, to deduce the second from the first. Yet, unless givenness is clearly the only kind of knowledge, such deduction is unjustified. Uncritical as such a dogmatic assumption is, it has been at work in modern philosophy to a disastrous extent. Kant indicates—in this following essentially Locke and Hume—that only phenomena can be given, and interprets this fact as meaning only phenomena can be known. The whole setting he gives to epistemology is a subtle begging of the question.

But when we recoil from the agnosticism of Kantianism

¹ The old-fashioned forms of materialism were cases of this mistaking of concepts for things.

'camouflaged' by the substitution of experience-in-general for the structure and demands of the consciousness of individual knowers and the identification of the physical world with constructs within this blanket experience, and return to a critical development of the leadings within common sense, we soon see that we humans do possess information about the physical existents we affirm. Within consciousness, we are acquainted only with contents; but what is to prevent us from regarding these contents as *material* for knowledge about the physical existents which we continue to affirm? What necessity is there for holding that *all* knowledge terminates on sensory contents? *That* is a sophisticated view which results from analysis and the abstraction from the meanings and attitudes of common sense.

Now, as I understand it, critical realism stands for the reality and fundamental significance of another kind of knowledge, a knowledge which presupposes this interpretative awareness of the data of observation as a foundation; and yet goes beyond it in the reference of propositions, built upon these data, to physical existents affirmed as knowledge about them. The propositions are within consciousness, the reference is an act in consciousness; but the existent, which is the object of such knowledge, is not in consciousness. The object of knowledge is identical with the object of perception; but, whereas in perception we tend to clothe the object in the apprehended content, we now think of the content as *material* for obtaining knowledge about the object.

Let it be granted that the very existence of knowledge about non-apprehensible objects implies a correspondence between the nature of the object and the character of the sense-datum so that we cannot regard the character of the sense-datum as arbitrary. If, under apparently the same conditions, an object changed its appearance in a capricious way, it would be impossible to regard presentations as material which could mediate knowledge about their controls. But our experience indicates a specific correspondence between physical existent and datum. One flower is white, another is blue, and so on. These differences are rightly taken by all to point to differences in the physical objects. Again, a difference in perceptual position is always judged to correspond to a difference of position on the part of the physical things.

But what is the exact nature of this correspondence? We should realise by now that no dialectical answer will do justice to it. We must appreciate the psycho-physical situation. A determinate existent is the object of the

organism's nervous attention and so controls the rise in the brain of a content of which the subject-self is conscious. The character of the stimulus must be *correlated* with the specific content aroused, but we have no reason to postulate a likeness of content. And what holds for specific qualities holds for such contentual differentiations as positions, distances, and structure. The sensuous contents are not *like* that which controls their rise. And yet, in spite of this denial of the meaningfulness of contentual identity between object and datum, there is every reason to assert a *differential correlation*. It is this differential correlation which makes presentational content the material for knowledge about the physical realm. Knowledge must be quarried out of it by patient comparison and ingenious experimental control. But is not that precisely what science effects?

In order to appreciate this information about physical existents mediated by the data of observation, it will be well for us clearly to distinguish it from all forms of the copy-theory. The copy-theory in all of its forms and gradations assumes that the content aroused in the mind is like the content of the corresponding object. *The master assumption in this view is that physical existents have, or are, contents of this sensuous nature.* But the very uniqueness of consciousness would seem to preclude such a view. I presume Berkeley had this point in mind when he said that a sensation can be like only a sensation.

The tendency of the mind to maintain the copy-view is easily understood. Just because common sense clothes physical existents with sensuous qualities, it retains doggedly this sort of *imagination* of them even when it is forced to admit that they are not direct contents of perception. Hume condemns the 'philosophical hypothesis' that physical existent and percept are numerically different yet resemble each other. He does this partly on the ground of parsimony. Yet representative perception always has a vogue. The physical object retires into the background as imperceptible, but it is still conceived as a double of the sensible thing or content of perception. Representative perception is the perceiving of the physical existent through its reproduction.

The usual criticism of representative perception is interrogatory: How can you know this to be true if you are limited to the content of perception? The criticism which I have offered is, I think, a deeper one. It points out the cause of the illusory tendency and shows that the facts indicate a differential correlation of sensory content and physical existent, two entities which are not co-ordinate because one is substantial and the other not.

In this connexion, it may be well to point out that the traditional categories of thing and its qualities also rest upon the naive form of realism. The qualities are the content of perception thought of as somehow attached to the thing. Every student of philosophy knows into what difficulties this mode of approach got medieval systems and, through them, Locke. The thing becomes an unknowable substance somehow supporting qualities. Critical realism turns its back upon this whole mode of approach. The physical existent is substantial in the sense that it is self-existent—though this self-existence does not preclude dynamic continuity with other parts of the physical realm—but it is not a substance in the Lockean sense. It has a determinate nature, but this nature is not something separable from it in the form of qualities. Knowledge about the existent is knowledge about its nature and, by that very fact, knowledge about it. The epistemological situation is, that we are confined to knowledge-content and its reference. We can think of the existent only in terms of knowledge.

Having, I hope, set the copy-theory at rest, in its form that there is an *identity of content* between physical existent and psychical content, I can now proceed to develop what I have called differential correlation. This correlation is not of the sort championed by the advocates of psycho-physical parallelism. There is obviously a causal relation between the terms correlated in the present case. Hence, that which arises in consciousness is not arbitrarily correlated with the complex of stimuli bearing upon the organism. We may speak of the terms as agreeing, or of the datum as conforming to the stimulus-complex without any content agreement implied.

The presentational complex is, therefore, in a delicate causal correspondence with the physical objects perceived. In this sense, the physical world reveals itself in the data of observation. It is a revelation which can afford the justification for the sort of knowledge about the physical world that we possess. The relation between physical existents and presentational complexes is purely natural and causal. It mediates the sort of data that are responsibly reflective of the physical world. Just because man is an organic individual he cannot expect to be in a more direct cognitive relation to other things than this.

How, then, must we adjudge the status of the presented content in perception? Existentially, as an intra-cortical content to be correlated with the perceived object; epistemologically, as the contentual material out of which knowledge

of the object can be gleaned. And one of my main contentions has been the undesirability of setting up an uncritical notion of what knowledge of the physical world must be.

The general conditions of knowledge are twofold: (1) the presence of data; and (2) the intelligent use and interrogation of these data in the way of analysis and synthesis, the formation of hypotheses, the construction of abstract concepts. In the chapter on the mind-body problem, I shall attempt to show that the capacity for both these factors is to be assigned to the brain; the brain, however, risen to the level of conscious functioning. What we are permitted to accept is a complex stimulation of the brain which is welcomed and furthered by the brain in accordance with its own nature and interests. The conscious brain-mind is interested in reality because of its adaptive function, and, like a skilled lawyer, draws out its story bit by bit and puts it together in its own language. The physical world must be assisted toward its unintentional self-revelation by such an organ as the brain-mind if knowledge is to arise.

And this setting of knowledge-content allows us to claim a genuine conformity between it and the physical existents known. The situation is, of course, unique, and metaphors will not much help us. We are confined to the mental side and can never literally grasp the existent known. Penetrative intuition or literal inspection of the physical world is impossible just because we are what we are. The conformity between knowledge-content (understood propositions) and determinate being rests upon such a use of the revelatory data as to enable us to gain insight into the determinate structure, capacities, and relations of physical things. Being is determinate, and knowledge patterns after it in accordance with its own medium.

II

Having laid and defended our critical foundation for physical realism, let us now proceed to develop its implications.

We have said that knowledge about the physical world is just the information made possible by the intelligent use of the data of observation. We come to our decisions that physical things have size, exclude one another, are massive, have position, have structure and organisation, have capacities for action, behave in certain describable ways. We develop a *claim* to knowledge of this sort which no scepticism has really weakened. And until this claim is disallowed, we shall *think* physical reality in terms of our knowledge. *It is this thinking physical reality in terms of our knowledge*

which the conformity of our knowledge to reality means. The second is just the reverse of the first. The tests of conformity are internal and are the tests of particular judgments, from the level of perceptual judgment to the more abstract levels of thought. But we have tried to give the whole construction its ultimate foundation by pointing out the responsible conformity of perceptual datum to the physical existents which are the objects of perception. The validity of knowledge is its conformity to reality.

In the light of this interpretation we can examine the structure of our critical knowledge about physical things. An explicit act of knowledge seems to involve at least three factors: (1) the affirmed existent with its determinate nature and continuities; (2) the propositional content within consciousness; and (3) the act of reference of the second to the first as informative of it. This analysis separates what is given together in a complex act of judgment, and yet it does not falsify the facts of the case. It appears that these factors are distinguishable in any judgment concerned with physical things. The physical existent is the subject of the judgment, and its name or symbol is the subject of the proposition; the predicate is the information about it; and the copula indicates the reference or relevance of the two. We think the existent affirmed in terms of the 'objectives'—to use a word of Meinong—that it has a particular structure, size, position, powers, etc. It should be noted, however, that critical realism differs from common sense in that it does not suppose the subject of the judgment to be literally presented nor does it assign to the subject any sensuous content. We *mean* the thing rather than see it, and our knowledge is not a picturing but a series of abstract statements for which data are merely the cues.

The easy way in which the realistic judgments of common sense can be developed into the frame-work of critical realism drives home the point I made earlier, that critical realism can retain the truth of common sense while passing beyond its naïveté. It also accounts for the fact that the critical judgments of science attach themselves to the matrix of common sense with such readiness. All the time, however, we know that science deals with the imperceptible. The *object of perception* is identical with the *object of knowledge*, and so the subject of judgment is the same; but the interpretation of this object is different in the two cases.¹ For the one, it coincides with the content of perception; for the other, this

¹ Those who wish a more detailed comparison of the judgment of naïve realism with that of critical realism will find it in my *Essentials of Philosophy*, ch. xi.

content is a mental datum correlative with the object. It is an *appearance* of the object.

In this setting, it may be worth while to point out the ambiguity of the term *imperceptible*. Distinguished philosophers have written to me saying that they could not believe in imperceptibles. But do they not ignore the distinction which the critical realist makes between the content and the object of perception? The physical existent is *not* an imperceptible if you mean *object* of perception ; it is an imperceptible if you mean *content* of perception.

And this distinction rests upon the nature of the act of perception itself. *The percipient organism attends to the object of perception*. We can see the focusing of the eyes, the tension of the head, the directive set of the body. The psychologist knows that the instincts and interests of the organism are aroused and are finding expression in this *behaviour*. We have a behaviour-attitude. And correlative with this is the *content* of perception, which is to subject-self within consciousness as the object of perception is to the behaviour-attitude of the organism. It is this parallelism which leads common sense to merge the correlatives and so identify content of perception with object of perception. All that critical realism does is to distinguish what is distinguishable, and so prepare the way for a satisfactory synthesis which will cover the facts which break down naïve realism.¹

Another implication needing stress is the absence of any cognitive relation between the physical existent known and the propositional knowledge about it. Past philosophy made much use in its dialectic of the subject-object relation. Idealists held that the object is internally bound up with the subject or knower, while the neo-realists countered with the idea of external or non-modifying relations which left the reality the same whether being known or temporarily outside the cognitive relation. The *ideal* of knowledge certainly favoured the realistic plea ; and yet the battle was drawn. What critical realism does is completely to change the problem from dialectic to fact. If the physical existent is extra-mental, it is nonsense to speak of a cognitive relation between it and the act of referred knowledge. Such a relation could only be transcendental and non-natural. And like all transcendental relations we soon find that it is absolutely unnecessary.

The physical existent is not an object in its own right. It is *made* an object by the selective activity of the percipient organism. And this selection is behaviour on the part of the

¹The chapter on the mind-body problem will perform this synthesis. See, however, an article of mine in the *Philosophical Review*, March, 1918.

organism, preliminary, usually, to overt action upon the existent selected as object. It is an adjustmental activity of the sort described above. The relation of the existent to the organism is causal; it is the source of stimuli. But the selection of one existent rather than another *as object* is due to the interest of the organism.¹ At the level of perception, therefore, we have the following correlation: objectively, or physically, an organism focusing upon one of many stimulating existents and making this existent its object, an action to which the existent is quite indifferent; subjectively, or in consciousness, a content growing in clearness as the self attends to it and initiates those adjustments felt as movements of the eye and head, etc. There is a togetherness of the content and the self in the unity of consciousness. Back of this togetherness is a functional activity of the organism, but there is no causal relation between content and self in consciousness. Between existent selected by the organism as object and the organism there is, on the other hand, a causal relation but *in the direction from existent to organism*. This factual analysis shows that there is no peculiar cognitive relation between the object and the percipient organism.

And what is true of perception is equally true of critical knowledge. The act of reference is a selection of an existent as object of the knowledge-claim. This selection is an internal process mediated by spatial and temporal distinctions. Thus I *mean* (select) the house five blocks from me on the right-hand side of the street. Instead of speaking of a cognitive relation, it would be far less ambiguous to speak of a *cognitive selection*.² But as soon as we do so, the dialectic controversies fade into their proper nothingness. The traditional maxim, "No subject without an object, and no object without a subject," can only mean that in perception and cognition the organism selects an existent as object, that is, as what it focuses itself upon. But philosophers have not well enough noted this relativity of *objectness* to the organism, and have interpreted the maxim as meaning no existent without a subject, which is untrue.

Physical realism must also defend itself against the phrase, "transcendence of experience". Experience is one of those blanket terms which have made epistemological analysis difficult. It seems nonsense to say that I can transcend experience. But as soon as I realise that experience means both consciousness and knowledge, the situation begins to

¹ The critical realist and the neo-realist have much in common here, but the neo-realist has confused the content with the object of perception.

² See *Critical Realism*, ch. viii. for a fuller development of this point.

clear up. I can transcend my consciousness, not in the sense that I can get outside of it in any literal way, but in the sense that the knowledge I build up in it can by an act *in consciousness* be thought of as interpretative of an existent affirmed by the conscious self as co-real. It cannot be too much stressed that consciousness is simply a term for the field of experience with its empirical structure. In this field the subject-self, which identifies itself with the organism, is the only existent accepted besides the objects perceived and thought about. To affirm these co-real objects is not to transcend consciousness. To so interpret functional acts in consciousness is to picture everything in a quasi-spatial way and so to create puzzles where none exist.

But I think that Kant's experience-in-general in which physical things are constructions has had much to do with the vogue of this boggy about transcending experience. And I shall say no more about this aspect of the controversy, for, if my approach has not already undermined Kantianism, I cannot hope to do it here. Kantianism and critical realism are incompatibles.

But 'transcend experience' has sometimes meant to transcend knowledge. To this we would simply reply that we do not want or need to transcend knowledge. If experience reaches as far as knowledge, we are satisfied. If I experience a person when I know him, experience is just another term for knowledge.

Finally, I would point out that the critical realist prefers such terms as selective reference or internal pointing in place of transcendence with its spatial associations. In knowledge we neither transcend consciousness nor knowledge. Referred knowledge is a function of consciousness, and consciousness is not a stuff which we have to walk out of in knowledge. Philosophy must be empirical and not be ridden by metaphors.

In the argument of the book, I shall constantly make the statement that we do not know the stuff of physical reality but only have knowledge about physical reality. Let me here anticipate the more serious objections which may be directed against such a statement by those who have not grasped adequately the implications of critical realism.

The assumption that we can know the stuff of the physical world gets its measure of plausibility and meaningfulness from two really opposed approaches. The naïve realist supposes that he intuits the physical thing itself. Knowledge is an awareness of the very inherent and essential qualities of the physical world. And is not this awareness a knowledge of the stuff of the world? There may be more to it than is revealed,

yet this more would be continuous with, and not essentially different from, what is revealed. Traditional materialism is, I presume, simply a scientific refinement of naïve realism in which secondary qualities are removed and master contents like mass and motion developed in the place of the more sensuous primary qualities. The world is abstractly intuited.

The other mode of approach to a knowledge of the stuff of the physical world is through analogy. The idealist holds that in consciousness we have a direct acquaintance with a substantial stuff which can be assigned by analogy to other reals. Panpsychism develops its theory of reality in this fashion. But is consciousness of a nature to bear this burden? Does the knowledge about the physical world which science achieves fit this flow of contents we know so well? I have never been able to persuade myself that it does. Consciousness is real—of that there can be no doubt—but is it not a flow of contents expressing and guiding the functioning of some more substantial reality?

But if neither by an intuition of external reality nor by an acquaintance with it in ourselves are we able to get into cognitive inspection of physical being, it would seem to follow that the ideal is impossible of attainment and so is, in a measure, illusory. The more we reflect upon the situation, the more do we ask ourselves what is really wanted. Physical existents are; they can be disintegrated theoretically into, say, electrons; but if sense-data are mental contents they cannot *reproduce* the electron and so reveal its stuff or essence. And are not these latter terms mere words? They symbolise what we feel must be there—something to account for what takes place, something as basis for structure and position. But must we not admit that we cannot get nearer to it? By our very situation and the very nature of consciousness, being eludes us. To know physical reality is not to grasp physical being. If this be agnosticism, it is at least of a peculiar kind. It is agnosticism only in relation to an uncritical ideal for the reach of human knowledge. It is not agnosticism of the traditional type with its contrast between knowable phenomena and unknowable absolute. We do have knowledge about physical reality, but we do not have a penetrative intuition of it. Let him who has it tell science what electricity is, and not merely what it does under specific conditions. *Knowledge has its place in consciousness, which is, itself, in an organism reacting to its environment.* Such knowledge necessarily has its limitations. Knowledge is other than being. But because it is knowledge, conformable to reality, it guides the human organism in its perilous effort

at adaptation to, and control of, the parts of the universe in which it finds itself.

Knowledge of another consciousness is different from knowledge about the physical world. *The first is a knowledge through asserted identity of content ; the second only information-about with no identity of content.* Thus when I interpret an expression on the face of my friend as meaning amusement, I use the expression as a symbol of a contentual experience which I regard as, in its essentials, the same for him as for me. Words which he uses are likewise admitted symbols of mental contents sufficiently identical in character. Such identity of meaning does not conflict with the numerical difference of existence of the two mental states implied.

This difference between the two kinds of referred knowledge coincides with the difference between the two realms. Were the physical world not, in some sense, other than consciousness, we should not expect this fundamental contrast in type of the two claims. In the one case, the data (expressions, gestures, and words) are natural or arbitrary symbols of mental contents ; in the other case, they are not symbols but cues for the construction of propositions. It is the claim of critical realism that it can suggest an evolutionary naturalism for which consciousness and the functioning brain can be thought of as continuous and one natural whole *by very reason of this difference in our knowledge of them.* Just because of its more adequate epistemology, it can harmonise what naïve materialism hopelessly separated or only verbally connected. Just because consciousness is not a physical thing, it can be inserted into the brain. Panpsychism tries to smooth over difficulties ; evolutionary naturalism conquers them by its more adequate analysis.

Critical realism has little difficulty in formulating the idea of truth implied in its theory of knowledge. Trueness and falsity are terms of approval and disapproval applied to judgments or claims to knowledge. Some judgments have turned out to be mistaken, and therefore the claim of a belief is theoretically disputable. When with this possibility in mind we say that an idea is true, *we mean that it is a case of knowledge as it claims to be.* It would seem, then, that the knowledge-claim is logically prior and is the important element in the meaning of truth ; and knowledge demands the correspondence or conformity of the asserted content with reality.

But when the idea of trueness is merged in the body of truths accepted by the human mind, truth is apt to contain other elements of meaning of an historical sort. Truth is something that grows and increases in volume and signi-

ficance. Old ideas are re-interpreted and new facts assimilated. I presume all thinkers would admit the genetic development of the systems of judgment which are now generally claimed to be true. Knowledge is not something machine-made. Parts of it are more or less adequate, more or less undergoing change. We are passing judgment upon the empirical content of various times and temporarily, perhaps, neglecting the idea of trueness.

We must also distinguish the *meaning* of truth from the *criteria* of truth. The criteria must be intra-experiential or empirical. I presume science lays almost equal stress upon fidelity to fact and coherence. Those ideas pass as true which agree with facts of observation and show a capacity, due to their content, of organising these facts in an explanatory way.

There has been, I think, a clearer understanding of these distinctions of late. Pragmatism can be credited with part of the glory, and realism with a goodly share of it. The rôle of idealism is more obscure. I would suggest that its chief value has been as a protest against the immediacies of neo-realism. Pragmatism has itself been developing away from its original stress on the feelings.¹ Its chief fault still appears to remain, *viz.*, an unwillingness to admit the implications of the knowledge-claim. It lives too exclusively in the temporal dimension of experience.

Brief as this discussion is it must suffice. All realists, I take it, admit that particular judgments may be absolutely true. When I assert that Columbus discovered America in 1492, this judgment is either true or false. Judgments may supplement each other and so form a system, but the individual judgments need not depend upon the system. Is it necessary to add that truth must not be used as synonymous with reality, as many objective idealists have been inclined to use it? Truth is a human affair. It is, however, not arbitrary, but, like knowledge of which it is the confirmation, strictly controlled by responsible data.

Finally, a few words at least must be said about the distinction between subsistent and existent. The new realists make much appeal to the subsistent as something equally real with the existent and yet not reducible to it. The self exists, the physical world exists, but geometrical objects, numbers, space, time, universals of all sorts, facts, ideals *subsist*. It is not always easy to decide what is meant by this contrast. Sometimes we hear mention of three kinds of being: the mental, the logical or subsistent, and the physical. And yet two of these are said to exist, while the third subsists.

¹ As I write this, I have received a thesis of a pragmatist entitled: *William James and Pragmatism* in which James's shortcomings are scored.

Frankly, the critical realist does not like this use of the term being. The very abstractness of the term is apt to lead to unreal puzzles. To admit co-ordinate kinds of being is to proclaim species of a genus; and what is more natural than to be challenged for both the differentia of each species and the common character which makes them belong to a genus? We have already hinted our belief that consciousness as a whole can be included in the physical realm when this latter is properly interpreted. We have argued that physical being cannot be grasped. What we can do is to state the essential characteristics of the physical realm as these are found in our knowledge about it. The realm of consciousness does not fit these characteristics; therefore, it cannot simply be identified with the physical realm, as panpsychism attempts to do. But a little reflexion shows us that we are acquainted with the one realm as we are not with the other. The exclusion cannot be one of inspection as has only too often been supposed. Moreover, the relation between them need not be one of identity in the sense that there is no difference between them. We must enlarge our notions of relationship and make them more empirical. An existential relationship is different from a logical relationship of likeness and difference. *Logical relations hold between objective contents in consciousness alone.* To anticipate our more detailed argument in a later chapter, we may say that consciousness is a functional expression of the brain, and so internal to, and continuous with, physical reality. And this relationship is existential. Only he who supposes that he can so intuit the whole being of the brain as to be certain that consciousness is not there has the logical right to reject this hypothesis to which all the empirical facts point. I presume that Bergson in his repeated declaration that consciousness cannot be in the brain is building upon his assumption that the material world is really space. Descartes still pursues the anti-intellectualist. To grasp time and throw it into the face of space as a fourth dimension is dialectical and not empirical. Epistemology must dig below these dialectical contrasts. It is the cherished persuasion of critical realism that it, alone, offers this possibility.

We come now to the distinction between the mental and the subsistent. To regard the logical or subsistent as a part of the mental used to be the unfailing course of philosophy. Such contents are for Locke ideas. And these ideas are contentual objects of the understanding when a man thinks. Let it be remembered that, for the critical realist of to-day, the *object* of perception and the *object* of cognition (knowledge-content, objectives, ideas) are mental subsistents which are

as they are experienced. But neo-realism with its tendency to identify consciousness with a reference to an object, or with a transparent awareness; or with a class of entities, seeks to avoid subjectivism by making a functional duality in consciousness into a dualism. We, on the other hand, have avoided subjectivism by attaining a more adequate notion of knowledge and making it a function of the whole of consciousness, a notion which does not eviscerate consciousness of concrete content and fits in with psychology.

The distinction between contents of which we are aware and the awareness of them is capital and must not be ignored. Cognition is not, however, a sort of immediacy; the self is alert and joins itself to concepts interpretative of the data intuited. Thus even the knowledge that terminates upon contents within consciousness is more than feeling. The self thinks the data. When there is a distinct problem, this process is very apparent; but it is always more or less there. When interpretation is at a minimum, either because no problem has clearly arisen or because the problem is solved, the objective content faces the self as an object of awareness. Now my argument is that this complex, "self aware of objective content," is a characteristic structure of consciousness.¹ It is carried over from perception to conception, from perception of objects to awareness of contents. *All that is needed is a loosening of the content from the meanings of thinghood. The content then stands out in its own right.* Such contents are called subsistents. Abstract space, time and number are not physical things, yet they are objective contents of thought. They can be analysed and synthesised. Did not the mind have this capacity, there could be no science. Thought deals with conceptual content.

Let me connect this structure within consciousness with the perceptual situation of the organism. It will be remembered that I laid stress upon the parallelism between the behaviour-attitude of the organism and the thing which it focuses upon (the object of perception), on the one side, and the two poles of consciousness, the subject-self and the content of perception, on the other. There is a duality on both sides that cannot be ignored. The content presented to, and interpreted by, the subject-self is to this self much as the thing is to the interested organism. The realist believes that this structure within consciousness is no accident. It is surely a functional reflexion of the situation of the organism. The perceptual datum is a mental substitute for the thing to which the organism is reacting, and the conscious self is

¹ See *Critical Realism*, ch. v.

interested in it for that reason. The situation of the organism is projected into consciousness. The subject-self as the representative and conscious expression of the instincts and purposes of the organism is to the organism as the sense-data are to the thing. The independence of the two terms which are extra-mental is reflected in the independence of the two poles of consciousness, the self aware and the contentual object of its awareness. And, if I am not mistaken, psychology admits that the presentational side of consciousness, connected as it largely is with special areas of the brain, has this sort of independence of subjective interest. Of course, the two poles are inseparable, yet there is no causal relation between them. The subject-self selects,¹ it does not create or change data.

It follows that I agree with much of the analysis of the English neo-realists in regard to awareness and its contentual object. Yet I am convinced that they have robbed awareness of its actual content by separating it from the interested and interpretative subject-self. Their other mistake was to regard the contentual element, or idea in the Lockean sense, as non-mental. As I have already argued in my *Critical Realism*, this total structure is an affair of consciousness in the psychological sense of that term.

Now as the practical attitude demanding action becomes less dominant, this perceptual structure remains, but is transformed. The very personal, active self becomes more the thinking subject; while the perceived *thing* becomes more a content of which the subject is aware, one of his thoughts. This content or idea may be a sense-datum or a very abstract complex, symbolised by words. But if my argument above is correct, this idea is mental and dependent upon the brain. The subject is just as mental, but is the centre of control and organisation. These ideas are what it is now the fashion to call subsistents. Their coming and going are events indifferent to their nature. What is given to the subject is the content and not the content's existence as a mental event.

Yet genetic analysis soon convinces the unprejudiced thinker that all ideas, even the most abstract, have their roots in sense-experience and so are continuous with presentations. Universals are not fictions, but they have the same existential status as sense-data.

But the ideas in terms of which we possess knowledge about the physical world are understood propositions. Knowledge has its internal structure as well as its reference. Data of awareness are the servants of propositional knowledge about things.

¹ It selects largely through its control of behaviour.