

M I N D

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—PROF. ALEXANDER'S THEORY OF SENSE PERCEPTION.¹

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THE PROBLEM.

THERE is a system of things and events which exist, endure, change and interact independently of the conditions which make them perceptible to us through sense experience. This we may call the physical world. It contains our own bodies and also things external to our bodies which we may call external objects. In agreement with Mr. Alexander and also with common sense and science, I take the existence of the physical world for granted. We are concerned only with the question how we know it in sense perception.

Ordinary sense perception includes much knowledge which is due to previous perceptions, as when we say that we hear a footstep on the stair or a horse trotting. But there is also in all sense perception a factor that cannot be accounted for in this way. There is a modification of the content of sense experience which occurs independently of any reinstatement from the past. This factor is present alike in normal perception and in dreams, hallucinations and illusions. When a drunkard seems to see pink rats, he is really aware of an actual sense-apparition such as would be normally experienced if there were really pink rats before his eyes.

¹ Contributed to the Joint Session of the Mind Association and Aristotelian Society at Manchester, July 14th-16th, 1922.

² Throughout this paper I have criticised Mr. Alexander's theory of knowledge in an unsparing way. I feel bound, therefore, to say once for all, that I immensely admire the ability and thoroughness with which he has attempted to maintain what I regard as a quite untenable doctrine. No one, I think, could have performed better the task which he has undertaken; and we owe him a great debt of gratitude for putting us in an advantageous position for judging a view which must be either accepted or rejected before further advance can be made.

These contents of immediate sense experience must not be confused with our knowing about them. We recognise and distinguish them; we attend to them, like or dislike them, desire their presence or absence. But they are not themselves recognitions or distinctions, likings or dislikings or desires.

They are or may be objects for a subject but are not themselves subjective. We have not a right to regard them as mental in any sense in which what is mental is contrasted with what is material. In agreement with Alexander, I should myself maintain that in the antithesis of matter and mind they fall on the side of matter and not of mind.

I use the term *sensum* rather than sensation because "sensation" almost inevitably suggests something distinctively mental, and may lead to confusion between knowing and experiencing on the one hand, and what we know or experience on the other. It is, in fact, open to the same objection as Berkeley's use of the word "idea" which gave rise to the gravest misunderstanding of his real meaning. Instead of sensation the term "sense-datum" has been employed by recent writers. But this also is a question-begging word. It suggests that what we originally know in sense perception is merely the sense apparition as immediately experienced to the exclusion of anything beyond it. This assumption seems to be a mere superstition, which would make knowledge of the physical world impossible. I, therefore, prefer the term "*sensum*" which is also used by Mr. Alexander. I prefer it because it does not prejudge the view that though knowledge is limited by immediate experience it is not even originally limited to immediate experience.

It is here that my disagreement with Mr. Alexander begins. He seems to hold that sense perception is primarily confined to *sensa*. His peculiar theory of sense knowledge is an attempt to show how on this assumption, we can, none the less, know by way of sense a world of physical things and events.

MR. ALEXANDER'S GENERAL THEORY.

According to Alexander, all knowledge is the direct revelation to the knowing mind of something which exists independently of being known. This is a position which I myself accept. I disagree only with his application of it to *sensa* and images. Here we are concerned especially with *sensa*. He asserts and I deny that *sensa* are identical with perceived features of physical existence.

A convenient way of approaching the question is by considering the connexion of *sensa* with those processes in the percipient's body without which they are not experienced.

It is, I take it, generally admitted that there is no variation in the *sensa* without corresponding variations in the bodily conditions, and no variation in relevant bodily conditions without corresponding variations in the *sensa*. Factors external to the body make no difference to the *sensum*, unless and so far as they affect the sense organ, and processes in the sense organ make no difference unless and so far as they affect the nervous system.

Facts of this sort naturally point to the view that *sensa* have no existence apart from the percipient's organism, and that what occurs outside the nervous system makes no difference to them, except in so far as it makes a difference to this. The *sensum* can no more be identical with all or any of the external factors concerned in the production of the physiological process than this process itself can be identical with its external conditions.

This is the natural view suggested *prima facie* by the facts. But Mr. Alexander thinks that the facts can be otherwise construed, and he holds that they must be otherwise construed if we are to give any tenable account of our knowledge of the physical world. His own theory may be called the penny-in-the-slot theory. According to him, when we perceive objects as external to our sense organs the *sensum* is itself a feature of the external object, having an existence and nature of its own, quite independent of its entrance into our sense experience, whereby it becomes a *sensum*. The physical and physiological conditions of perception simply serve to unveil it. They put a penny in the slot and so, as it were, remove a screen which would otherwise have hidden it from the percipient.

In looking at a sheet of white paper, I experience a *sensum* having a certain shape and colour quality. Alexander holds that under normal conditions, this very shape and quality, as I immediately experience them, pre-existed in the paper before I saw it, and continue to exist when I cease to see it. They exist in the paper whether anyone sees it or not, and might have so existed if there had been no eyes or brains in the world. The passage of reflected light from the paper to the eye and the ensuing processes in the retina and brain determine only the appearing of the sense apparition. They in no way determine the existence or nature of that which is thus revealed. In this example there is a continuous train of processes constituting what may be called a bridge between the perceived physical existence at one end and at the other the neural occurrences which are more directly connected with the relevant sense experience. Further, the bridging series of events is causally initiated from the side of

the thing perceived and not from the side of the subject. What occurs to the percipient's brain is only a terminal effect. But this is not what happens in ideal revivals, dreams, illusions and hallucinations. When for instance, we look at a grey speck on a red ground and, owing to contrast, experience a green sensum instead of a grey one, what is revealed as a sensum is some particular green existing in a place and at a time other than the place and time of the grey speck. The green depends on the reflexion of light from the surface of some independently existing thing. But the reflected light is not propagated to the eyes of the percipient. How then is the connexion established when the green is sensibly revealed to him? Mr. Alexander answers that the process which unveils the sensum may be initiated in two ways. In veridical perception, it is initiated from the side of the perceived object. In dreams, illusions, hallucinations and also in ideal revival, it is initiated from the side of the subject. There is simply an inversion of what is otherwise, in all relevant respects, the same train of events.¹

Mr. Alexander does not anywhere attempt to deny that sense apparitions come and go and vary in strict correspondence with events happening in the sense organs and nervous system just as if, not only their appearance, but their nature and existence were inseparable from such bodily conditions. From this point of view, therefore, all that he can be logically justified in asserting is that his own revelation theory is a possible alternative which may also be made to fit the facts. Instead of proceeding in this way, he presses his own dictum upon us as that which we must accept to the exclusion of any other. Before proceeding to detailed criticism, it will be useful to consider the motives which have led him to take up a position so uncompromising.

THE MOTIVES WHICH UNDERLIE HIS THEORY.

He certainly does not prefer his own theory on the ground that it is simpler. On the contrary, he frankly admits that it is much more complicated and difficult. "I cannot," he says, "help confessing how much simpler it would be, and how much laborious explanation it would save, if only it were true that our intuitions and sensations were mental, as is commonly supposed, and how easy it is compared with our procedure to refer" their "variations in part to the mind or its body".² His reason for refusing to follow this easy road is that it leads to destruction. "We should be living

¹ I shall try to show at the close of this paper that there is no such initiation from the side of the subject.

² *Space, Time, and Deity*, vol. ii., p. 199.

in a world of sensations which would be hallucinations . . . ; some would be veridical and some not. But we could only discriminate the veridical ones by means of sensation, that is, by other hallucinations. For it is of no use to urge that our appearances are partly determined by the thing and partly by our bodies. How shall we know what part is due to things except through observation, for which, in turn, we are dependent in part upon our bodies? We are reduced to a world of consistent hallucination."¹ In this passage Alexander treats as equivalent two entirely distinct propositions: (1) that *sensa* and images are mental, and (2) that they are directly correlated in their existence and nature with occurrences in the body of the percipient. I admit and maintain that if they were not material but mental we could not know anything about a material world. We should not even have the thought of such a world so as to be able to raise the question whether it exists or not. If, through sense perception, we are to know about the moon as it exists independently of our sensitive organism, the *sensum* which we have in seeing it must be continuous in existence with it, and therefore fundamentally homogeneous with it in its general nature. The contents of sense experience and physical facts must belong to the same order of being and be contained within the unity of the same continuous whole. Just as, within the sense experience of each individual, his several *sensa* are variable modifications of one presentation continuum, so the several presentation continua of each of us are all continued into and are of a piece with a wider continuum which comprehends and connects them—comprehends and connects them as the physical universe comprehends and connects your body and mine. It will be said that even if, in fact, *sensa* are thus prolonged into an existence beyond themselves, yet, since this existence is not immediately experienced, we can never come to know that it exists or of what nature it is. It is of vital importance to note at the outset that this supposed difficulty arises from the assumption that in sense knowledge all that we know primarily and immediately is what from time to time we immediately experience as a *sensum*. On this basis it is cogently argued that if we start merely with these immediate *sensa*, there is no assignable way of passing beyond them. Hence, if they are not themselves features of the physical world existing apart from the conditions under which they appear to us, it is impossible that we should ever come to know, or even have any thought of physical objects at all.

¹ *Space, Time, and Deity*, vol. ii., p. 199.

As Dr. Hutcheson Stirling puts it: "How can the scratch know of the thorn?" Granting the initial assumption, this reasoning seems incontrovertible. But if we concede the initial assumption, I do not see how Alexander's theory of perception can remove the resulting difficulty. Whether *sensa* are or are not features of the world existing apart from our sense organs and nervous system, they form at any rate only a vanishingly small fragment of this world as known to common sense in its spatial and temporal immensity, and its microscopic complexity. If this tiny bit is all that is primarily known how are we to pass from it to a knowledge of the rest? Further, even the given fragment lacks the internal coherence of the material world. *Sensa*, considered merely as they occur within individual experience, have no systematic order according to general rules, such as makes possible our daily lives. Berkeley, Mill, and Mr. Russell, in order to obtain such an order, have to posit, besides actual *sensa*, a vast system of possibilities of sensation, conceived as existing, persisting, changing, and mutually determining each other as if they were not mere possibilities but actual existences. But if we start purely and merely from *sensa* as they are actually sensed, and images as they are actually imaged, we cannot even reach such a system of possibilities: and if we could, we should not be able to define what the system is without presupposing a system of actual existences other than the *sensa* themselves, on which it depends—including our own bodies and the things around us, near and remote. If we grant to Mr. Alexander that *sensa* are merely disclosures within our experience of independently existing features of the physical world, and that therefore they cannot be hallucinations, yet if these *sensa* are all that we know, they cannot for us constitute a world.

But does Mr. Alexander really assume that our knowledge is primarily confined to the contents of immediate experience? The answer is that sometimes he does and sometimes he does not. The term "experience" is loose and ambiguous; and Mr. Alexander seems to pass from one meaning of it to another without noting the difference. Sometimes, the word is used for all knowledge as dependent on experience, as having its source in experience, as limited and conditioned by the limitations and conditions of experience. Sometimes it is used for the experience itself in which knowledge has its source, and by which it is conditioned and therefore limited. A dentist's knowledge that his patient is feeling toothache doubtless has its *source* in experience in the narrower sense of the word. What is thus known may

therefore be said to come within the range of his experience—in the wider sense. But, in the narrower sense, he certainly does not experience his patient's toothache. He can experience only his own toothache. He can know about his patient's pain; but he cannot, as Mr. Russell would say, be immediately acquainted with it. To avoid the ambiguity, I am in the habit of calling experience in the narrower sense, *immediate* experience. But Mr. Alexander does not attempt to avoid the ambiguity. It continually brings grist to his mill and alone makes his theory of knowledge seem plausible.

This fundamental confusion is found even in his general account of primary sense perception. Primarily, according to him, what is experienced is the *sensum*, and the *sensum* is a feature of the physical world existing quite independently of the conditions under which we experience it—existing before and continuing to exist after its appearance to us. But besides this he always assumes, tacitly or explicitly, not only that this independent existence is a fact, but that the fact is immediately known in sense-knowledge. I grant that if it is to be known at all, it must be immediately known.¹ But it does not follow that what is immediately known must be immediately experienced. How can we immediately experience the fact that something existed before it was immediately experienced and will exist after it has ceased to be so, and that its existence is independent of its occurrence as a sense apparition? How can such facts be immediately experienced as the *sensum* itself is? If knowledge of this sort is to be called experience, it can be so only in the wider and looser application of the word. It is, of course, open to Mr. Alexander to say that what I have called the wider and looser application is the only one that is important, and that the distinction between what we immediately experience and what we know *through* experience makes no difference to his account of the way in which we know the external world. But if he proceeds on this principle, he ought to do so consistently. He has no right to ignore a distinction in working out his own views, and also to use this very distinction as a weapon against those who disagree with him. Yet this is precisely what he does, as may be shown by a further quotation from the passage to which I have already referred. After dismissing other alternatives which might remain open, if his own theory of perception is rejected, he proceeds as follows: "Or we may suppose that thought informs us of a

¹ Immediate knowledge is here contrasted with *inference*. There is a fundamental sense in which all knowledge, including what is inferential, is immediate.

world of things to which our appearances are a guide. But I do not know how that thought could have experience of its object or what sort of an object it could be; and indeed the real world would remain in this way an unknown."¹ Now, when Mr. Alexander speaks in this way, he is using the word "experience" in the narrower application as meaning immediate experience to the exclusion of any thought of what is not immediately experienced. His position is that what is not thus experienced cannot be known at all. But this distinction is, for him, only a stick to beat a dog with. In working out his own theories, he ignores it or denies it. For him, the experience which is identical with knowledge of a sensum, includes the knowledge of that sensum as existing independently of its appearance to us. But it is only the apparition as such which can be immediately experienced, not its existence independent of its appearance. Similarly, he takes for granted not only that we can experience the same thing at different moments, but that we recognise it being the same at the different moments. Again, he would say that our knowledge of other minds is experience. But he can hardly say that when I know that some one else has feelings and sensations his feelings are literally identical with my feelings and that his sensing of sensa is literally identical with my sensing of sensa. When, therefore, in the passage quoted, he says, "I do not know how that thought which informs us of a world of things could have experience of its object, or what sort of an object it would be," the reply is obvious. In the wider meaning of "experience," which Alexander himself freely uses, and cannot help using, experience includes thought, which is not experience in the narrower sense. From this point of view, the thought itself is experience of the object, and the thought itself immediately reveals "what sort of an object" it is.

MY OWN POSITION.

I have now attempted to state, in general, and also to criticise, in general, Mr. Alexander's account of sense perception. I have yet to consider, in detail, the way in which he attempts to reconcile his fundamental doctrine that the sensum is simply identical with an independent physical existence, with the fact, which he like others is bound to recognise, that sensa vary in manifold ways without corresponding variations in what we take ourselves to see or feel

¹ *Space, Time, and Deity*, vol. ii., p. 200.

when we experience them. But before entering on this topic, it will conduce to clearness if I give a very brief sketch of my own view of the way in which we know the material world.

First let me say that it seems to me the most arbitrary dogmatism for any one to attempt to determine *a priori* what is and what is not capable of being known. If we consider the concept of knowledge in general, apart from the special circumstances of this or that individual knower, there is no reason why it should not be coextensive with all being. There is nothing to confine it to this or that part of the universe, or to anything short of the whole in its unity and in its detail. That things are known is as much an inexplicable fact as that they exist. To ask how anything can be known is like asking how anything can exist. Both are wonderful facts, but it is no use wondering at them. We must take them as we find them. When, therefore, we turn to consider finite individuals, we must assume that their knowledge is limited, not because it is knowledge, but because they are finite. The problem is not—'How can I know anything?' but rather 'How is it that I do not know everything?' What is to be accounted for is not knowledge but ignorance and error and beliefs that may or may not be true.

It is clear that at least one fundamental reason of the limitation of knowledge in finite individuals is the limitation of their immediate experience, owing to its dependence on what takes place in their finite bodies. But, as I have already insisted, if we assume that what we know is not only limited by immediate experience but primarily confined to immediate experience, we cut off all possibility of knowing anything beyond this. Setting aside this alternative, what are we to substitute for it? We may find a clue by taking into account the omnipresent fact that, in a very important sense, knowledge is *not* limited. It is not possible to fix on this or that partial feature or aspect of the universe and assert that we know this *only*, without, in knowing it, also knowing something beyond it and connected with it in some sort of unity. We cannot, so to speak, draw a chalk line circumscribing what we know and dividing it absolutely from what we do not know. The special items which we regard as known to us always come before us in questionable shape. They are or may be apprehended as essentially incomplete, and so raise questions concerning what is required to complete them. And a question always includes some notion of the general nature of its answer. In wanting to know something, we must know, however indefinitely, what it is that we want to know. Thus, what we call ignorance is really

diluted knowledge. We know what we are ignorant of as being unknown and as connected with what we know. There is no reason why this principle should not hold for the first beginning of our knowledge of the material world as well as for its subsequent stages; and I therefore assume that in primary sense knowledge more is immediately known than is immediately experienced. More precisely, I proceed on the assumption that the whole complex content of our sense experience and each of its several discernible parts are primarily apprehended as continued into a whole which transcends and includes them.¹ The unity of the whole is apprehended as a continuation of the unity of that fragment of it which is immediately experienced. Hence what is not experienced, inasmuch as it is immediately known as being of a piece with what is experienced, must be from the outset apprehended as homogeneous with it in those general respects without which the continuous connexion cannot be thought. These will include those fundamental features on which the unity and continuity of our own presentation-continuum depends—extension, temporal succession and change, degree of intensity, and, in general, what Mr. Alexander would call categorial characters.

For each individual the material world has two parts, though it is only in critical reflexion that he comes explicitly to distinguish them. There is, on the one hand, his own *sensa*, and, on the other, what we may call the physical existence which is not immediately experienced by him though he has immediate knowledge of it in knowing his own sense apparitions. The unity of his own presentation-continuum means for him a corresponding unity in the physical world. In knowing distinctions and relations between his own *sensa*, in knowing their changes and variations, he knows corresponding distinctions and relations in the domain of physical existence.

This may seem a large assumption. But, of itself, it will not take us far. It leaves us still on the threshold of our problem. Taken by itself it would make the realm of physical existence, as far as we are concerned, merely an idle duplicate of the content of sense experience. In order to account for our knowledge of external objects, we have still to answer two questions: (1) How is it that variations are constantly occurring in the content of sense experience

¹ What Dr. Ward calls the 'projection of the self' seems to me to be equally primary and inseparable from this projection of the presentation continuum. But for the purpose of this paper I may neglect this aspect of the question.

which do not imply corresponding variations in the external objects which we take ourselves to see or touch or otherwise perceive by our senses? (2) How is it that when these variations are left out of count as irrelevant, we can, none the less, independently of them, determine definitely and positively the nature of the external object? How, for instance, can we determine the extent of the thing seen though we cannot identify this with any one of the variable extents of the sense presentations which we have in seeing or touching it?

The answer to the first question is found in the distinction and relation between the body of the percipient and its environment. We apprehend our own bodies in apprehending a certain complex of *sensa* which we may call the *body-complex*. This complex is persistently and continuously presented while other *sensa* come and go. It consists, in part, of *sensa* which are the same in kind and continuous in existence with those that we experience in perceiving other physical existences and their local and temporal distinctions and relations. Thus, at this moment, the visual presentation which I have in looking at my hand, forms part of the continuous field of visual experience which also includes the visual presentation of a table. The same holds for touch when I touch successively or simultaneously my hand and the table. But the body complex also includes *sensa* peculiar to itself which enable each of us to apprehend his own body in a way in which we do not apprehend other things. These are (a) organic *sensa* such as hunger, thirst, and what are distinctively called *bodily* pains and pleasures; (b) motor *sensa*, which scientific enquiry has found to be conditioned by the variable states of muscles, joints and tendons, due to the variable position and motion of the limbs and sense organs. The first point to be noted is that the experiences in which we apprehend the body as visible and tangible normally accompany motor experiences and vary regularly as these vary. The second is that motor *sensa* are in regular ways under subjective control. Apart from the experience of resisted effort, we can initiate, continue, discontinue or change them at will, or, at will, retain them unchanged. This holds good independently of variable circumstances. I can wave my hand whether I am on the top of Vesuvius or in my lecture room. Now this subjective control of motor *sensa* also involves a corresponding control of the connected visual and tactual *sensa*. This, however, is not so unconditional. It depends on an *appropriate* adjustment of the organs of sight and touch. I cannot see my moving

hand unless my eyes are turned in the right direction. In this respect the perception of our body and its movements is conditioned like the perception of objects external to the body. With this reservation, we may say that control of our bodily changes as these are known by way of motor sensibility is also control over the same changes as known by sight and touch.

I now take a step of vital importance. Other *sensa* besides those which belong to the body-complex are also under subjective control. Their occurrence and cessation, their continuance and their variations are constantly conditioned by perceived movements and positions of the body which we can command at will. This control, as compared with that which we have over our own free movements, is partial, limited and conditional. But, within its limits, it is of a regular and systematic character. It is limited, inasmuch as we cannot by any motion of our body or sense organs determine *what* specific sense experiences we shall have. We can only determine their occurrence, persistence, and cessation, and cause them to change in various regular ways, when they are already present. Whenever I open my eyes I have certain visual presentations, and these regularly disappear when I close them. But the opening of my eyes does not, of itself, determine *what* special presentations I shall have, or how they shall be grouped. In stretching out my hand I get cutaneous sensations, but whether these shall be such as arise in contact with the air, with a table, or with water does not depend on me. In approaching or retiring from a visible object the visual *sensum* which we have in perceiving this object increases and diminishes in magnitude in a regular way. But which special magnitude it shall have at any given distance is otherwise determined. As a final example, take the experience of resisted effort. The degree and character of effort put forth is variable at will, but the degree and kind of resistance met with is not. There is thus revealed, in endlessly manifold complex and subtle ways, the antithesis between sense experience as dependent on the motion and position of the body, and as dependent on things external to the body. Change and difference so far as conditioned by our bodily position are not, and are not taken to be, change and difference in the external object perceived. This is my answer to the first question.

The second question arises out of this answer to the first. What is the real nature of the external object, if we cannot identify it with the real nature of the sense presentations which we have in perceiving it? Its character is apprehended

as quite independent of the bodily conditions of perceiving it; but the *sensa* we have in perceiving it perpetually vary as these conditions vary. How then can we determine positively and definitely the size and shape of physical objects outside our body, in distinction from the size and shape of the relevant visual and tactual *sensa*? We determine the independent nature of objects external to the sense organs, not directly by their relation to our sense experience but by certain relations which they have to each other, relations of such a kind that they *do not vary with the bodily conditions of perception*.

In order to illustrate the general principle, it will be sufficient to refer only to causal relations and to relations of extensive magnitude. If I turn on the tap in my bath-room, water flows and the bath begins to fill. Inasmuch as the flow of the water is apprehended as causally conditioned, in the given situation, by the turning of the tap, it is a process which takes place independently of the bodily conditions of perceiving it. Even if I leave the bath-room altogether I assume, that, because the tap is turned on, the water is still flowing as it would if I were present. The characters of external objects are determined for us, in part, by the differences they make to such independent causal processes. If we look down from a high cliff on men on the beach below us, the visual apparitions of the men beneath us are extremely small as compared with those of men standing beside us. A child might be led to believe that the men themselves are proportionally diminutive. But from the causal point of view this would mean that if he were near enough, he could pick one of them up and put him in his pocket. Similarly, if an oar were really bent in the water; this would be awkward for rowers.

The extensive magnitude of external objects is in part determined by their causal relations. But there is also a more direct way of fixing it, measurement by superposition. In the first instance, the measurement is by superposition of the members of the percipient's own body on each other and on external things.

This relation of superposition does not itself fall within immediate sense experience. When my hand is in contact with the table, there are not two layers of tactual *sensa* which cover each other. The relation is between two physical existences considered as existing independently of the bodily conditions of perception and the coming and going and other variations of the sense impressions which are connected with these bodily conditions. So far and so long as

the palm of my left hand is in contact with the table I cannot, by any motor adjustment, see either the surface of the table or the palm of my hand. I cannot touch either of them with the other hand, and I can neither see nor touch anything between them. It is thus that the relation of superposition is revealed as independent of the vicissitudes of my sense experience and its bodily conditions. It would be so revealed, even if my hand were insentient, if, for example, it were made of wood. Nothing depends on the peculiar nature of touch sensations. They are important only because, normally, when we have them our skin is in contact with a surface external to it. Hence they are for us signs of superposition. It is on this condition that the advantage of touch over sight depends. Otherwise the delicacy of tactual discrimination of size and shape is far inferior to that of sight. It is not the superior precision of any form of sense experience which leads ultimately to the minute exactness of scientific measurement. It is rather such relations as superposition which do not vary with the varying conditions of sense experience.

Such means of assigning positive values to the characters of external objects, after discounting the conditions of perception, just because they are founded on the relations of external objects to each other, can yield only knowledge of *relative* size, shape and position. Hence the modern doctrine of relativity is only a complex development of the relativity involved from the outset in primitive stages of perceptual knowledge. From the same point of view, we can account for the distinction of primary and secondary qualities. Secondary qualities are those which are not thus determinable by the relations of external objects to each other. Hence, though we may know them as existing independently of the variations of our sense experience, we cannot, or can only, in a very inadequate way, fix what they are apart from these variations.

THE PRECISE POINT AT ISSUE.

From this account of my own position, it is clear wherein this differs from that of Mr. Alexander. We agree in holding that all knowledge is an immediate revelation of what exists. But he maintains and I deny that this immediate knowledge is primarily confined to what is immediately experienced. This question I have already dealt with. But there is another arising out of his position which requires further discussion. If we start, as he

seems to suppose, by knowing only what we immediately experience, how can we pass from immediately experienced *sensa* to external objects? According to Mr. Alexander the question itself rests on a mistake. It rests on the assumption that the *sensum* is an existence distinct from the external object perceived in experiencing it. Alexander on the contrary cuts the knot by assuming that when we perceive something external to the body or sense organs the *sensum* is simply identical with some feature either of the thing perceived or of some other thing which we have previously perceived or which at any rate exists or has existed in the external world. I have already pointed out that even if we grant the identity as fact, this does not explain how the identity comes to be known. This, however, is a difficulty which does not seem to trouble Mr. Alexander. But there is another which does trouble him, so that he feels bound to meet it by an elaborate explanation. He spends all his ingenuity in attempting to answer the question how, if the *sensum* is always identical with some feature of external existence, it is possible for the *sensum* to vary without corresponding variations in the external object which we perceive or take ourselves to perceive.

He uses the term "appearances" for *sensa* considered from this point of view. His general position is that so far as appearances differ from what we take ourselves to perceive this is because in them what really exists in the external world is either only partially revealed or revealed in a distorted way.

REAL APPEARANCES.

Setting distortions aside for the moment, let us consider first the fragmentary nature of the sense revelation. How is this fragmentariness made to account for difference between the *sensum* and the feature of the external object which is supposed to be identical with it? At first sight it would seem that there can be no road this way. For if the partial feature which is revealed is simply identical with the given *sensum*, it is hard to understand how in spite of this identity it may yet differ from the *sensum*, merely because there are other partial features which are not revealed. It would seem that to account for this there must be distortion as well as deficiency. In fact, as we shall see, Mr. Alexander does everywhere introduce distortion, without recognising that he is doing so. Appearances supposed to be partial but not distorted are called by Alexander real

appearances. A simple example is the change in the brightness of a light, or the loudness of a sound, as we approach the source or recede from it. According to Alexander "the mind situated further off selects a portion of the thing". Part of this is identical with the *sensum*, other parts are not. This would seem a simple and straightforward explanation, if we could attach a satisfactory meaning to the phrase "part of the brightness". But according to Alexander himself there are no such parts. As he immediately goes on to say, the "selection of the lower brightness from the real brightness does not mean that that real brightness is divisible into parts, as if intensities could be obtained by addition". This being so, I, at any rate, see no way of avoiding the conclusion that, inasmuch as there are no parts to select from, no parts can be selected. Each degree of brightness as immediately experienced is a distinct degree, occupying its own place in the intensive scale. To say that the real brightness contains the others is merely a very inaccurate way of saying that it is more intense or, at any rate, not less intense than any of them. It is therefore not surprising that side by side with this, Mr. Alexander gives another and quite different explanation of what it is that is selected from the total object. This is now said to be not part of the intensive quality, but part of the external stimulus which conditions the apprehension of it. On this view, "the distance from a sound selects that amplitude of the qualitative vibration which represents the diminished intensity produced by distance". The difficulty here is that no such selection takes place, and also that if it did it would not be what is required. Selection, in the only relevant sense, means that part of the external object is a *sensum* and part not. But in seeing brightness or hearing sounds the light and sound vibrations are not presented as *sensa* either wholly or fractionally; and even if they were they would not be identical with the brightness or the sound. They would not be so either in fact or according to Mr. Alexander. For, according to him, a sensible quality is something new which emerges when certain motions occur. It is not identical with the motions themselves. Thus the alleged selection from the amplitude of the vibration merely means that the occurrence and nature of the *sensum* depends not directly on the vibration as it initially proceeds from the external object, but on the way in which the previous state of the sense organ and nervous system is modified by that phase of the vibration which reaches the ear. Wherever the vibration comes from and however it may originally be set going, the sound *sensum* is determined by that phase of it in

which it arrives at the sense organ and contributes to determine changes in this and in connected neural arrangements. In other words the occurrence and nature of the sensum depends directly only on what takes place in the body of the percipient, however this may be occasioned. But this is just what Alexander is concerned to deny.

Let us, however, suppose that, in some relevant sense, part of an intensity may be revealed in sense experience and part not. Such partial presentation will not cover the facts unless it is taken also to involve distortion.

What is revealed as a sensum, so far as it is thus revealed is itself a distinct and separate intensity, not part of an intensity. The part in being cut off from the whole to which it is supposed to belong, becomes itself a distinct intensive whole, a distinct degree of intensity occupying its own place in the intensive scale. Thus a less intensive magnitude is substituted for the intensive magnitude of the external and distinct sound or brightness. This is distortion. But Mr. Alexander cannot admit distortion in what he calls "real appearances". The real appearances are the basis and presupposition of all others and they are called real just because they are assumed not to be distorted by bodily or mental conditions.

So far I have been considering only whether Mr. Alexander's theory is tenable, when examined from the point of view of our present knowledge of the external world and of the conditions of perceiving it. But there is a further question which, though it is altogether of vital importance to his general position, is completely ignored by him. Let us grant that the several degrees of brightness which we immediately experience in approaching a source of light form an ascending scale which has its upper limit in the brightness of the external object and that this brightness exists quite independently of our sense experience and its bodily conditions. Let us grant that this holds good in such a way that, at least metaphorically, we may legitimately speak of the several degrees of brightness as parts of the external brightness. Conceding all this, we have still to inquire whether it is included in the primary sense knowledge of the percipient. Is the knowledge a constituent condition of the first apprehension of the external object as such? If Mr. Alexander had faced this question, he would, I submit, have found himself caught between the horns of a very serious dilemma. If he says "yes" then he must frankly and consistently surrender the assumption that we can primarily know only what we immediately experience as we

experience a present sensum. What thus enters experience is only a part of the external intensity. If it not only is a part, but is apprehended as being a part, there is the knowledge of an intensive whole, which includes it, and this whole, *ex hypothesi*, is not itself a sensum, and has never been a sensum, or if it has it cannot be known to have been a sensum. I should say that the intensive whole, if it is primarily known, is known by a thought which has its source in the essential incompleteness of immediate experience. In the strict use of language, I prefer to say that it is known *by* experience rather than that it is itself experienced. Mr. Alexander, on the contrary, may insist if he likes in calling thought, as such, a kind of experience. The question concerns only the employment of words, and does not touch the real issue. The essential point is that on any view the bare immediacy of sense is transcended, and so transcended as to yield knowledge of what Hume called matter of fact in distinction from relation of ideas. More is immediately known than is immediately experienced.

On the other hand, if it is said that the partial intensities are not primarily apprehended as partial, Mr. Alexander seems to be impaled on another horn of the dilemma. How do the parts of the whole external intensity come to be apprehended as being parts of it? Or, what comes to the same thing, how is the existence of the whole external intensity known at all? It must be remembered that for Mr. Alexander the apprehension of real appearances is the basis of all further knowledge of the external world. It is here, therefore, if anywhere, that we must look for the answer to our question. But he fails to supply any answer, and none can be given consistent with the assumption that we primarily know only what we immediately experience. He is thus, after all his pains and ingenuity, faced with what is, in principle, the old insoluble problem. If we begin by knowing only our own sensa, how can we ever get beyond them? The difficulty is not met and is hardly mitigated by saying that the sensa are in fact identical with partial features of the external object.

Real appearances vary not only in intensity but in size and shape. When we move away from a plate at right angles to its centre, the relevant visual sensum retains its shape, but diminishes in size as the retinal surface excited becomes smaller. Yet the size of the external object as determined by measurement and the part it plays in causal process remains constant. If the plate is seen obliquely the shrinking is greater for one axis than another and its sensible shape varies in consequence. The sensum is elliptical in-

stead of circular. According to Mr. Alexander, "the distance of the eye from the plate acts selectively as with the varying degrees of brightness; the size which we see is a portion of the real geometrical size of the plate".¹ Here he tacitly assumes that what we see is identical with the visual sensum which we have in seeing. This is contrary to the ordinary use of language, and gives rise to great confusion. What we take ourselves to see is not merely the size of the visual sensum but the size of the external object as suggested under the given conditions by the visual sensum. As I approach or retire from the plate there are certain limits of distance within which I do not ordinarily notice the difference between the successive visual experiences so as to compare them. I have learned to regard them as due merely to bodily conditions of perception and therefore as irrelevant. Hence I see the plate as of the same constant size and shape in spite of them. Beyond these limits of distance I become aware of the sensible variations as such, and then they perceptually suggest corresponding, though not proportionate, variations in the external size and shape. So far as this happens, I still take myself to see the size and shape of the external objects. The only difference is that I may recognise that I see them inaccurately. Mr. Alexander, in identifying the sensation with what is seen, shares the fundamental fallacy of Berkeley that we properly and primarily perceive only what we immediately experience.

External size and shape is of course the same whether we are conversant with it by way of sight or by way of touch, so far as the perception is not mistaken. But this does not imply that the extensive tactual sensum is ever identical with the extension of visual sensa. This identity is asserted by Mr. Alexander; but he does not even attempt to meet the cogent argument against it in Berkeley's *Theory of Vision*. He merely appeals to a simple experiment. "We have only to hold the plate in our hands and move it away . . . in order to assure ourselves that the touch and the colour of the plate are in the same place." Now I agree that this experience yields evidence of the identity of extension as seen, and extension as touched. But it does not in the least show that visual and tactual sensa are included within the same continuous extension. What is really relevant and important is that the extent of the plate as measured by superposition of the hand remains constant, while the visual sensa vary. The constancy of tactual sensa as compared

¹ *Space, Time, and Deity*, vol. ii., p. 194.

with visual is not a superiority but a defect. It is to be noted that they are not constant except for the same part of the skin; and even with this restriction the constancy is only due to the fact that the conditions under which the tactual experience is gained are strictly fixed and limited instead of being widely variable as they are for sight. But this is merely a defect to be added to the other imperfections of touch as compared with vision. The tactual sensum is constant only in the way in which any one of the alternative visual presentations is constant so long as the eyes are turned in the same direction, and the thing seen is at the same distance. The difference is that tactual experience is limited to one set of conditions and does not occur at all without them.

It follows from what I have just said that neither the real nor the apparent shape of the external object is identical with the size or shape of the visual apparition immediately experienced. The real shape and size of the external object is determinable by measurement and causal relations. Its apparent size and shape is what we, rightly or wrongly, estimate the real size and shape to be as suggested by present sense experience in conjunction with preacquired knowledge. This being so, there is no *a priori* reason for accepting Mr. Alexander's position that the size of the sensum and the external size differ only as part and whole, the extent of the sensum being only a portion of the extent of the thing seen. We have now to consider whether this hypothesis fits the facts better or worse than the alternative view that the sensum depends directly and ultimately only on the way in which the sense organ is affected.

Extensive magnitude unlike intensive does contain distinct parts and we may therefore speak quite literally of some parts being revealed in sense experience while others are unrevealed. But this is not an accurate description of what we observe when a visual presentation shrinks as the distance from the thing seen increases. It is not correct to say that some parts vanish while others persist. Each discernible part shrinks as well as the whole and the whole shrinks only because the parts shrink. Details do disappear but only because they gradually become too small to be distinguishable, until at the last we are left with a blur in which none of the original details can be discerned. This does not fit in well with Mr. Alexander's theory. But it is just what we should expect if the visual magnitude is correlated with retinal and nervous process and is dependent on other factors only if and so far as they condition this.

Even if, setting aside this difficulty, we suppose that

what happens is that some parts are taken and others left, this is not enough. It does not explain how or why the selected parts close with each other and run together in one continuous immediately experienced extension, instead of having distances or gaps between them, corresponding to the parts selected. This involves more than mere selection. It is also distortion of the kind which Mr. Alexander would class as illusion. Parts which are immediately contiguous in sense experience are separated by intervals in the external object. In Mr. Alexander's language, they are seen in situations which do not really belong to them. We thus again reach the result that the *real appearance* in which the external object is supposed to be simply identical with the sensum is, in fact, infected through and through with illusive distortion. But the basis of Mr. Alexander's theory is that real appearance is free from illusion. It is indeed for that reason that he calls it real. There is also the further difficulty that the distortion as distinguished from mere selection requires a separate special explanation on another principle. I do not doubt that Mr. Alexander's ingenuity could devise one. But it is the extreme of perversity to put forward two radically distinct hypotheses, both of a very complicated nature, when the facts themselves carry one simple, obvious and adequate explanation, so to speak, written on their face. The size and shape of the sensum varies directly with the retinal excitation whatever factor may be concerned in producing this.

Before leaving the subject of real appearance, I may note that the same epistemological difficulty confronts Mr. Alexander for extensive as for intensive variations. Does the percipient subject himself know in primary sense knowledge that there is a total extension containing all the parts revealed to him as *sensa*? Does he primarily apprehend the parts as parts of this whole? If he does, then primary sense knowledge transcends immediate experience. On the other hand if parts are not apprehended as parts, how can we ever come to know that there is a whole which transcends and includes them?

MERE APPEARANCES.

According to Alexander the distinctive character of the appearances which he calls real is that though they are selected from the whole nature of the thing perceived they are not otherwise altered. Besides this he recognises two other kinds of appearances which are not merely

selected but distorted. The word "distorted" means that instead of the external object which we take ourselves to perceive, something else is substituted more or less different from it. Strictly following out his general philosophy of perception, Mr. Alexander maintains that what is thus substituted does not at all owe its nature and existence to any process occurring in the body of the percipient; on the contrary it is always some feature or other in the external world, existing quite independently of the occurrence of sensations and their bodily conditions. There is distortion only inasmuch as this independent existence is sensuously revealed in connexion with a thing to which it does not belong; and this means that it is revealed in a place where it really is not or at a time when it really is not. Such misleading revelations are traced to different sources. They may be due to the mind of the percipient, which includes for Alexander the bodily conditions of perception. When this occurs the appearances are called illusory. On the other hand the distortion may be due merely to the combination of the thing perceived with other things which are also themselves perceived or at least capable of being so. The sense-appearance is then called a mere appearance. It is with mere appearances that we are at present concerned.

At the outset, I find it impossible to obtain from Mr. Alexander any consistent and intelligible account of what a mere appearance is. On two points, indeed, he is clear. The mere appearance is not identical with any feature of the external object to which it is referred by the percipient, when this is considered in detachment from its environment. The partially immersed stick, when considered by itself, apart from its immersion, is not bent as it seems to be. In the second place, the mere appearance is in some way identical with a feature of the total situation composed of the special object perceived and other objects combined with this. It is when we inquire how this can be that the puzzle begins. I find in Mr. Alexander two distinct accounts of what takes place; and neither of them seems tenable. Both are given side by side in the following passage. In mere appearance, "we do not sense the thing of which we apprehend the mere appearance taken by itself, but in connexion with some other thing which modifies it".¹ Let me here interrupt the quotation to say that this is the first alternative. What is relevant in the *sensum* is, on this view, really a feature of the particular external object perceived, as this object is really

¹ *Space, Time, and Deity*, vol. ii., p. 191.

modified by something else. In the rest of the quotation Mr. Alexander drops this view and passes, without being aware of the discrepancy, to a quite different position. "What we sense or otherwise apprehend is not the thing by itself, but a new thing of which the thing forms a part; and there is no reason to suppose, illusion barred, the compound thing does not really possess what we sense." Here the *sensum* is identified, not with a feature of the perceived thing as this is modified by its environing conditions, but with a feature of a compound object conditioned by the combination of the thing perceived with other things.

Both these explanations break down hopelessly: and Mr. Alexander is only able to conceal the inadequacy of each of them by oscillating between it and the other. Take first the modification theory. If the perceived object is really modified by the conditions under which it exists, this means that it really has a character which would not characterise it if these were absent. It is this character which is revealed in the mere appearance. What is revealed as a *sensum* does in fact belong to that external object which we take ourselves to perceive. It is plain that if this were so, there would be no distinction between a mere appearance and a real appearance. As a matter of fact, what Mr. Alexander calls mere appearances are not constituted in this way. The water does not really bend the stick in which it is plunged. What is modified in both instances is the light in its passage to the eye, and the retinal excitation, and the visual presentation dependent on this. We are no better off if we try the other alternative, that what is revealed as a *sensum* is a character of a composite external object containing, as a part of itself, the particular thing which we perceive. It is not true that the bend in the visual presentation when we see a partially immersed oar, is identical with a bend of the whole physical complex constituted by the water and the oar. There is no such bend; what is true is that this complex of external conditions gives rise to refraction of the light proceeding to the eye, and thereby determines the retinal process in such a way that the visual *sensum* is really bent. Similarly when we see a distant mountain through a haze, it is not true that the colour-quality which we immediately experience is really spread over the surface both of the haze and mountain. In what way then can it be said to belong to both of them together if it belongs to neither of them separately? To say that it belongs to both together is only a very inaccurate way of stating the obvious fact. The light reflected from the mountain is so altered by its passage through the haze as to

affect the eye as it would not otherwise do and so gives rise to different visual presentations.

We have yet to consider a third formula used by Mr. Alexander, which is inconsistent with either of the others. The *sensum* is supposed to be identical with some feature of an object existing in the environment of the percipient: but owing to other conditions also existing in the environment, what is thus revealed as a *sensum* is revealed in a place in which it is not really present. How far this explanation is supposed to cover mere appearances in general, I am not sure. It is applied by Mr. Alexander especially to one mere appearance, reflexion in a plain mirror, assumed to be flawless. Let us suppose that what is reflected is the body of a man facing the glass. Then, according to Mr. Alexander, the shape, size and colouring of the man is really where the man is, some distance in front of the mirror. But for one who sees the reflexion this identical shape, size and colour is immediately experienced in a place where it is not, i.e., some distance behind the surface of the glass.

This theory, if it is taken strictly, I hold to be quite impossible. But it is important that it should be taken strictly, and not confused with another position which no one, I presume, would dispute. Undoubtedly when we see a man reflected in a mirror, his shape and size, and consequently the man himself appear, i.e., *seem* to be where they really are not, or seem as if they were where they really are not. If the percipient does not otherwise know the contrary, he will believe that there is a man behind the mirror. A baby, for instance, may feel for the man whom he takes to be in front of him. To the baby it seems that there is a man there. To us it only seems as if there were a man there.

Up to this point the word "appears" has been used as a synonym of "seems". I have not spoken of appearing absolutely, but only of something appearing or *seeming to be* this or that, or appearing as if it were this or that. But the word appearing has also another and a radically different meaning. It may be used absolutely. Now if and so far as anything really appears in this sense it really is as it appears. If the man himself really appears behind the mirror he really is behind the mirror. The apparition is the reality itself appearing. There is no question of seeming. Whoever may deny this, Mr. Alexander cannot consistently do so. For his whole philosophy of perception is based on the assumption that what is revealed in immediate sense experience exists as a feature of the external world. This presupposes that at least it really exists.

The relevant visual sensum which we have on looking at the reflexion of a man in a mirror does really appear and not merely seem to be in a certain place with a certain situation relatively to other places. This is possible inasmuch as it is a locally distinct part of the total field of visual sensa experienced at the time. It is a sense apparition revealed within a more extensive apparition which is itself revealed in the same way. Within this continuous whole it is immediately experienced in certain local relations to other sensa, e.g., those which we have in seeing the frame of the mirror or articles on our dressing table. An appeal to immediate experience yields unambiguous evidence that it does really appear and does therefore exist in these relations and does not merely seem to be in them. Unfortunately for Mr. Alexander, this appeal to immediate experience makes nonsense of his whole doctrine of sense knowledge. It makes nonsense of his fundamental doctrine that sensa are identical with characters of the external object. For the form and colour of the man whose reflexion we see is not really placed relatively to the frame of the looking glass, as the corresponding visual apparitions are really placed in relation to each other. If the form and colour of the man are identical with the form and colour immediately experienced, when his reflexion is seen, then the form and colour of the man must really exist, and not merely appear to exist, in two separate places at the same time. This is most clearly shown by a fact which evidently puzzles Mr. Alexander, as it ought to do. "If" he says, "you touch a thing like a pencil which is in front of you so that you see it directly and also in the mirror, the judgment is troubled. For the virtual image is only seen with the help of the mirror, and the real pencil is seen as well as touched; and there are thus two visions of space at once."¹ On my view this means that though we see the same single external object, there really are three distinct sensa, two visual and one tactual. But if, like Alexander, we identify the single external object with the several sensa we are in a desperate position. The visual apparitions are really distinct within the field of visual experience, and separated from each other by an experienced interval. Immediate experience reveals their local separation just as it reveals their shape and colour. I have as little right to deny that there are two of them as to deny that they exist at all. It is just because there are two visual sensa that it seems as if there were two external objects—two hands.

¹ *Space, Time, and Deity*, vol. ii., p. 198.

It is strongly, vividly and insistent suggested that there are two hands, only because in ordinary vision there are usually two external objects where two visual presentations are distinguished. It is futile to urge that the same sensum is twice apprehended and on this account seems itself to be doubled. For there is no way of distinguishing the awareness of one sensum from that of the other except by distinguishing the sensa themselves.

ILLUSORY APPEARANCES.

Illusory and mere appearances are, for Mr. Alexander, essentially akin inasmuch as in both of them a sensum appears in connexion with an external object to which it does not really belong. But there is a difference in the conditions under which this takes place. In mere appearance the displacement is due to factors external to the body of the percipient. An illusion, on the contrary, is due to what occurs within the sensitive organism. Both in illusion and mere appearance, what is sensibly revealed disagrees with what really exists only so far as a sensum is misplaced in space or time. The sensum itself which is thus misplaced is supposed to be identical with something which really exists in the external world at some place or time. In mere appearance, it is supposed to be somehow contained in the total situation which confronts the percipient. In illusion it may be anywhere.

I have already examined the conception of something as appearing in a place in which it is not. The same difficulty which I have noted in dealing with the mirror, arises here also. "There is," says Alexander, "no illusion until an element in the appearance which does not belong to the thing is perceived as belonging to it: until, for instance, the green seen by contrast on a piece of grey paper lying on a red ground is seen as an affection of the place of the grey paper. The green by itself is not illusory, but the patch, occupied by the grey, seen as green." (II., p. 209.) I would here first inquire what ground we have for asserting the existence of the green sensum. The only answer and the sufficient answer is that the green is actually revealed within immediate sense experience. But on the same principle we are also bound to assert that the green sensum does not merely seem to be actually placed within the red. For what is immediately experienced is a green situated within a red field and continuous with it. This green therefore does not merely seem, but actually is, within the red.

But, according to Alexander, the red as sensed is identical with the red colour of the paper, and the colour of the paper is where the paper is and nowhere else. If this were true it would inevitably follow that the green is really situated within the red surface of the paper and continuous with it. But, *ex hypothesi*, what occupies this particular place within the red background of the paper is, in fact, not a green but a grey speck. The only conclusion that I find myself able to draw is that Mr. Alexander is wrong in identifying *sensa* with features of external objects existing independently of sensation and its bodily conditions. The existence and nature of *sensa* are inseparable from correlated processes in the nervous system and sense organs. The characters of things external to the body are unaffected by these processes.

In conclusion, I must insist on an objection which, if it is well founded, is fatal to Mr. Alexander's account, not only of illusory perception, but of ideal revival in general. It is fundamental to his whole theory that when the mind knows an external object it shall communicate with *this* through a specially appropriate transaction in which both are equally partners. In ordinary sense perception there is a continuous train of occurrences causally initiated by the object and terminating in a process taking place in the brain of the percipient. There ought to be an analogous bridge in ideal revivals and in illusion between the independently existing object and the cognitive subject. According to Mr. Alexander there is such a bridge here also. The only difference is that whereas in normal perception the common transaction is initiated from the side of the object, in illusion or ideal revival it is initiated from the side of the subject. In ordinary perception, the bridge is thrown across the stream from one bank; in ideal revival and illusory perception it is thrown across the stream from the opposite bank. It must be admitted that this formula is very neat. My difficulty is that it seems to ride rough-shod over the relevant facts. The formula could be justified only on the false assumption that for example, when, owing to contrast, we have a green *sensum* instead of a grey, there is initially a certain process in the brain and organ of vision, which sets going a light vibration or some equivalent train of occurrences terminating in something which is really green and not grey. Otherwise the interval between the percipient and the independently existing object is not bridged as it is in veridical perception. If it is said that no bridge is required and that a certain cerebral event by itself suffices to unveil a certain *sensum* in whatever place and time this may exist, I would ask you to

consider the hopeless jigsaw puzzle which, on this view, would confront us from our infancy. Then, sense experience would indeed reveal characters and qualities in the world external to the body, but would supply no clue to determine where and when they existed. It may be said that originally the process which discloses a certain *sensum* must be initiated from the side of the object, but that when communication has once been opened, the nervous occurrence will suffice by itself however it may arise. But the explanation does not really meet the difficulty. It is as if it were maintained that having previously crossed a stream by a bridge we can therefore cross it after the bridge has been swept away, provided only that a fragment of it remains on our side of the stream.