

CHAPTER VI

THE CONSTRUCTION OF THE EXTERNAL WORLD

OUR thesis is that belief in an independent external world is a mental construction. What is meant by a mental construction, what its logical characters are, will appear in due course. For the moment we must consider how our thesis can be justified. Its justification can only consist in the following two steps:

(1) It must be shown that our belief in an independent world is not given to us immediately in experience; that it is not an inference from anything which is immediately given in experience; and that to explain it as an instinctive or primitive belief is merely to admit defeat in our attempt to provide a rational explanation and justification of it. If these statements are admitted, it would seem to follow that only one other explanation is possible, namely that the belief is a mental construction. Or at least it will follow that such a suggestion is one which must be explored, and that if it is not accepted, the onus of suggesting some other explanation and justification will be upon those who dispute it.

(2) It must be shown how the mind could have set about constructing the belief, what steps it has taken in doing so, and why it has taken these steps. In other words, it is not enough merely to suggest that the belief must be a mental construction, but the details of the construction must be actually exhibited to the reader and shown to be plausible.

The propositions set forth under (1) have already been discussed, and I think proved, in the preceding chapter. We shall return to them again from time to time, and do what is possible to make them still clearer. But it is with (2) that we shall be chiefly engaged in this chapter. We shall attempt to exhibit the actual steps of the construction. But two remarks fall to be made by way of preface to this attempt.

Firstly, we must remind ourselves of a point which has already been made. The mental development which we are about to witness is primarily a logical development, but must nevertheless, according to our view, stand in some real relation to the actual history of mind. Our primary question will be, *how* can the solitary mind, shut up within its world of private phantasms, come to a knowledge of the solid permanent external world? How can it logically pass to that end? What is the logical justification of its belief? There never can be any logical passage, if by logical passage we mean inference. There is no evidence whatever to convince the solitary mind of the existence of the public world. Not only is there no demonstrative proof, but there is not even the faintest trace of probable reasoning. We shall conclude that the belief is a construction of the mind itself. And our main business will be to exhibit the logical order of the steps of this construction.

But it is also our view that the construction must actually have taken place in history, and indeed that it must take place anew in each individual mind. As to the first point, we surmise that somewhere in the history of life on the planet there must have been a time when the rudimentary minds of living organisms did not realize the existence of an external world, and that belief in it must have slowly evolved. Will it be asserted that the Cambrian trilobite possessed it? Or even that the present-day lobster does so? Must not the world of the trilobite have been something like that which we have described as the world of the solitary mind, only even more rudimentary in being less clearly realized than the picture we have drawn of it? Can it be supposed that rudimentary forms of animal life realize that the green patch which represents a tree to them to-day is the *same* as yesterday's green patch, and has gone on existing between whiles? Can we be sure that even the intelligent dog which is our companion can distinguish its dreams (i.e. its private world) from public reality? Be it far from me to dogmatize about obscure and perhaps insoluble problems of animal psychology. Yet it seems implausible to suppose that belief in an independent

external world came ready-made into the world with the first breathings of life. And if it did not, it must have been evolved. (Will those, by the way, who think that this belief is a 'primitive belief' tell us whether it descended suddenly, like a bolt from the blue, upon humanity, or if not, how, when, and why, it evolved?)

Thus belief in an external world must have had a beginning in the dim past. It must have had stages of development. There is, of course, no direct evidence of these stages. Unfortunately we have, except in a metaphorical sense, no fossil minds. We have to reconstruct the development. *Why should the stages not have been the logical steps which, as we are about to show, would naturally lead the mind to that end?*

Not that it is meant, of course, that the minds of our human or pre-human ancestors consciously went over the steps of the construction. That would be absurd, and would be crediting them with the minds of modern abstract philosophers. But the philosopher only makes explicit what is already implicit in the mind. And the historical construction of the external world was, of course, implicit or subconscious. There is nothing unusual in such implicit processes. In practical life we act, not realizing our own motives. Other people, more acute than we are, detect those hidden motives. And it is not unreasonable to say that we actually acted from those motives, that it was through them that we were led to our actions. In theoretical matters we grope our way towards our conclusions, not realizing the logical reasons which are driving us on. Politically, peoples grope their way towards liberty, not understanding the rational end towards which they are moving, nor the ideals which are unconsciously shaping their minds. It did need a Freud to see these plain everyday facts.

We must hold, moreover, not only that the human mind has in the past implicitly gone through the stages of the mental construction which we are about to set forth, but that each present-day individual must do so somehow in his infancy. Has the mind of the three-days-old child any

recognition of the independence and externality of the world? Does it know that the light which it sees is the *same* light as other minds see, that it is public, that it was there before it was seen and will be there after? Even to debate these questions seriously would be absurd. How then does each of us come by these beliefs?

It is quite possible, in the first place, that there is some kind of hereditary tendency to believe.¹ This tendency, which may have been transmitted to us along millions of years, this potential belief, will spring into actuality unnoticed as we develop, as a result of the faintest suggestions from other minds. This tendency must have originated in the minds of our ancestors through their implicit construction of the beliefs. Partly this. And partly in each one of us individually as we grow up, some such surmising, some such logical reaching out and groping, some such mental construction as will be described in the following pages, must be gone through deep down in the dim regions of our unconscious selves.² Here too there are many analogies to correct us if we are inclined to think this unlikely. Must it not be believed that in growing up each of us learns to use his vision? We have to learn to interpret the sensations which we receive through our eyes, and to recognize objects. It is well known that this process involves subtle and elaborate inferences, and these clearly must be carried on implicitly and unconsciously in very early childhood. It is no more unlikely that the infant implicitly goes through the process of constructing the external world than that it goes through the elaborate intellectual processes involved in the interpretation of visual stimuli. Both processes alike are no doubt enormously helped out by heredity and the facility gained thereby.

¹ Cf. R. F. Rattray's paper 'An Outline of Genetic Psychology' in the July 1931 issue of *Philosophy*. He writes: "There is a considerable accumulation of evidence . . . that the ovum and spermatozoon carry over an epitome of the ancestral memories of the whole of their ancestors."

² R. F. Rattray, *op. cit.*: "In the depth of subconsciousness are all the infinitely multifarious and yet unified experiences of the ancestry."

Our second prefatory remark is that the account which will be given of the construction of the external world does not profess to be anything more than diagrammatic. To give a precise and detailed account of the intellectual processes involved in vision would probably prove a task surpassing the subtlety of the human mind. And it is the same here. It will only be possible for us to mark out the essential, the most important, considerations which have led the mind to the construction of the independent world. I think we can still trace out the main steps of the ascent, but no more. Moreover these steps must necessarily be set out here in serial order, whereas it may be that the mind actually makes them either in a different order or possibly takes several steps simultaneously. We can do no more than pick out the main points in the progress and exhibit them in the order which seems to be the most logical.

Let us emphasize once more the nature of the starting-point. It is not the given in general, a given common to many minds. Such a common given is part of the very construction which still lies ahead of us. It is *my* given and no other from which I must start. Or to use impersonal terms it is the private given of the solitary mind. That mind is not aware of the existence of other minds, since the existence of other minds is not given. Much less, then, can it be aware of the givens of other minds, or of a common given, or of any kind of public world.

Before the solitary mind there passes, as in a dream, a shifting, unsolid, phantasmagoria of colours, sounds, smells, and other sense-data. It ebbs and flows. It changes continually like a kaleidoscope. When a sense-datum repeats itself, the mind can note the resemblance and apply its concepts of the given. It recognizes red, and distinguishes it from green. It also distinguishes its own acts of thinking, conceiving, comparing, attending, from the passivity of its sense-data, and can rise thereby to the distinction between the I and the not-I. It does not call this not-I either 'inside' or 'outside' the mind, either

'mental' or 'non-mental', either 'dependent' or 'independent' on itself, either 'real' or 'unreal'. All such distinctions lie in the future, and are the result of the construction of the external world which we are about to study.

Let us suppose that a green book is placed before the eyes, is removed for a short while, and is then placed before the eyes again. The solitary mind perceives this, not of course as a book, but as a series of appearing and disappearing flat green patches. On its second appearance it notes the resemblance of green to green, and applies its concept of the given, 'green'. But it has no reason for actually identifying the first green patch with the second. It will suppose that a green patch came into existence and then ceased to exist, and that after a while *another* green patch came into existence. And it will suppose that both green patches ceased to exist as soon as they respectively disappeared from its own vision.

Beyond this stage the solitary mind can never get. It is essential to realize that, *unless at this stage of development there come upon the scene the phenomena of communication with other minds, consciousness will remain at the low level just depicted for ever.* The solitary mind can never by its own unaided efforts come to believe that what it senses persists when it is not being sensed. The concept of the external world is a social product, and could not have existed but for communication with other minds. Without such communication any further progress of knowledge is absolutely blocked.

It would seem then that our next step should be to explain how we become aware of other minds. And that would really be the most logical procedure. But it will be more convenient to avoid interrupting the course of our argument at this point by a discussion on that topic, and to leave it over to be dealt with in a later chapter. For the rest of this chapter I shall therefore *assume* that the solitary mind has somehow (in a manner to be later explained) become aware of the existence of other selves, and has got into communication with them.

The justification of this procedure is simple convenience.

In reality our knowledge of an external world and of other selves are interdependent, and must have grown up together *pari passu*. But we have to follow each interwoven thread separately. It does not much matter in which order we take them. But I think it will render the understanding of our argument easier if we do not break off here to consider the source of our knowledge of other minds. Assuming, then, that the solitary mind has now got into communication with other minds, we will proceed to trace out its further development in a series of mental constructions.

First Construction.

That the presentations of one mind bear to the corresponding presentations of other minds the relation of resemblance.

Suppose that a green book is placed before two minds *A* and *B*. They both see a green patch at once, and they are able by means of words, or signs of any kind, to communicate and compare notes of their experiences. The first construction set out above means that the green patch of *A* resembles the green patch of *B* in the same way as two green patches in the same mind may resemble each other and give rise to the concept of the given 'green'. It is ordinarily assumed, when two or more minds are surveying the same scene, that they all see, hear, and smell similar colours, sounds, and odours. When you and I look at a tree we assume that the tree which you see is like the tree which I see, and so on.

It will be carefully noted that it is not stated in this construction that the minds *A* and *B* see the *same* green patch, but only that they see two *similar* green patches. That these two green patches are numerically identical is a later idea which requires for its establishment a separate construction.

Now the fact that a common world has in fact been established, and that we are all able to talk to each other *as if* our several presentations resemble each other, does not prove that they in fact do so. All it proves is that between the series of presentations of one mind and that of another

there is a correspondence of order or relation. In order to see this let us take a specific case. Suppose that minds *A* and *B* are both looking at the same green book at the same time. Suppose further that the book is then opened at a blank white page, is then closed again, and is finally removed altogether from the field of vision and replaced by a red book. This gives the series of presentations green, white, green, red. *A* and *B* now compare notes. The first presentation *A* calls 'green'. *B* notes the word and applies it to his first presentation, *whatever that presentation may have been and whether it resembled A's first presentation or not*. They then agree that whenever the presentation which appeared before them reappears they will call it 'green'. The same with the rest of the series, white, green, red. Provided that whenever *A* receives the presentation which *he* calls green *B* receives the presentation which *he* calls green, and similarly with all other presentations, they will then always agree in their descriptions of what they sense, whether the presentations of *A* actually resemble the presentations of *B* or not. Provided the order and relations of the two series of presentations agree in two minds, they will be able to communicate with one another, to discuss and compare experiences, and to build up a common world. That they do so, therefore, does not prove that the content of the presentations which they receive resemble each other in any way whatever.

Nor is there any other way of proving this fact. How can I possibly know that my red resembles your red, or that any sensation of mine resembles any sensation of yours? Obviously there is only one way in which it could be proved, and that would be by comparing our sensations, e.g. my red with your red. But who is to perform this act of comparison? I can never see your red and you can never see mine. And a third party who might be impartial can see neither. It is clearly the same with all our experiences. I cannot feel the pain in your leg, and whether what you call pain is in any way similar to what I call pain I have no means of knowing. There is therefore no possibility of proving the similarity of our presentations. It is not an

inference which follows from any of the data with which we started. Not only is it not demonstrable. It is not even a probable conclusion. It is not an inference of any kind.

I have no positive assurance that my red is not your blue, or that what is colour to me does not make on your mind an impression similar to my impression of sound. I have no positive assurance even that our two sets of presentations are in any way commensurable. Your presentations may be wholly inconceivable to me, and such as do not exist in my universe at all. It is a common reflection that we cannot conceive a new colour, a colour unlike any colour in the spectrum. It is quite possible that the whole of your presentations are as inconceivable to me as is a new colour. Even if this is so, it would not be a bar to communication and to the establishment between us of a common world, so long as our presentations, though dissimilar in content, *correspond* in order and relations.

One way of interpreting these facts would be to argue that as the resemblance of the presentations of different minds is irrelevant to the establishment of a common world, we might leave it out of our construction altogether. We might dismiss it as not being part of the concept of a public world which we are endeavouring to build up. But this would be a mistake for two reasons.

In the first place, although it may be possible to conceive the common world without including the idea of the resemblance with which we are dealing, yet this is not the ordinary conception. It would be a highly unusual and sophisticated conception which would not occur to any one except a philosopher. Now we are not at present trying to exhibit the construction of philosophical ideas. That can be found in histories of philosophy. We are attempting to exhibit the construction, which has gone on perhaps for millions of years, of the ordinary human being's naïve realism, his belief in an independent world which goes on existing when he is not aware of it, and which exists for other people besides himself. And this naïve realism certainly does include the conception that

the presentations of different minds resemble one another. The plain man takes it for granted that, when he sees a green object, another mind looking at the same object will receive a precisely similar green presentation. He will admit colour blindness as giving rise to exceptional cases, but this very exception, he will think, will prove the rule. (Colour blindness actually proves nothing, of course, except that, where it exists, there is a certain lack of full correspondence of relations between the presentations of the minds which differ.)

There is, moreover, a second reason why this first construction cannot be left out. Our second construction, it will be found, carries the mind a step farther. It will assert, not merely that the two presentations which *A* and *B* receive when they look together at the green book are similar, but that they are numerically identical. Now they cannot be identical if they are dissimilar. If we are later to identify them, we cannot now admit that they do not even resemble each other. And from this point of view it will be seen that our first construction is a necessary part of the general process of constructing an independent public world.

This conclusion too could be avoided by the expedient of asserting that when *A* and *B* look at the same book, they see *two* presentations of one object, i.e. that what we have to identify is, not the presentations, but the objects of which they are representative. And if so, of course, there is no necessity to hold that the presentations resemble each other. But the idea that there exists one 'object' behind the many presentations is itself a construction which will have to be made at a later stage. It will be found to depend upon the present construction and the series of constructions which follow. Therefore this present construction cannot be omitted.

We may proceed, then, with our construction. It is impossible to produce one tittle of evidence to show that your red resembles my red, or that in general the presentations of one mind resemble the presentations of any other mind. And yet the mind believes it to be true,

and builds this belief into its conception of the public world. Since it is not given, and is not an inference from anything which is given, it must be a mental construction. And this means that the mind has simply *assumed* its truth, has invented it as a fiction which suits its purposes.

But this statement throws upon us the obligation of showing *what* the mind's purposes are. *Why* does the mind make this assumption? If we cannot show any natural probability that the mind would invent this idea, if we cannot show that it has good reason to do so, then it can hardly be said that we have rendered the construction plausible. But if we can prove that this assumption is exactly what we should expect the mind to make, that the mind has in fact good reason to make it, then we shall have done all that is possible towards rendering it probable that such has actually been the mind's course.

What reason, then, has the mind to take this step? The reason seems fairly obvious. As far as the evidence goes, the mind has before it two alternative beliefs, either of which it may adopt. When minds *A* and *B* are looking at the green book they may believe either (1) that their two presentations are similar, or (2) that they are dissimilar and even incommensurable. *Neither of these beliefs has any evidence whatever either for or against it.* The mind is entirely free to adopt whichever it pleases. Which will it adopt, and why? Will it not naturally adopt the *simpler*? And is it not clear that if the society of minds adopts the view that every mind has its own peculiar presentations unlike those of every other mind, this will lead to an enormously complicated universe? A perfectly unnecessary complication. To adopt the belief that the presentations of different minds resemble each other will be a great simplification of our picture of the universe. This view is chosen, then, because it is a simplification, and for no other reason.

This is our first example of what we shall later call *alternative truths*. A free choice between two equally unprovable assumptions frequently presents itself to the mind. We shall hold that in such cases both of the rival

assumptions are equally 'true'. They are alternative truths. They are alternative paths each of which would have been equally legitimate for knowledge to have taken. But that one has actually been built into the fabric of human knowledge which presents the advantage of greater simplicity and economy of thought. Many examples will come before us. One of these may be mentioned briefly now, though its full significance must be left to be expounded on a later page. The choice between Euclidean and non-Euclidean geometries is on precisely the same footing as the choice between the beliefs that the corresponding presentations of different minds resemble each other, and that they do not resemble each other. But the mind has for most ordinary purposes chosen Euclidean geometry solely because for those purposes it is simpler. And when, as in relativity mechanics, non-Euclidean geometry is chosen, that choice also has been made purely because, for the particular purposes in view, that geometry is simpler. So it is here. And I have mentioned the example of geometry here in order to sow thus early in the reader's mind the seeds of the following thought. The principles which govern the mind's procedure in the most advanced science will be found even here too in the lowest and humblest kind of knowledge, viz. that which we receive through our senses in the perception of the ordinary objects of the external world. Knowledge is of a piece all through, and shows everywhere the same characters and processes. Just as the geometer may choose any geometry he pleases, so the mind *might* have chosen the path indicated by the assumption that the presentations of different minds bear no resemblance to each other. We might all have believed that. But knowledge has actually chosen the other path for the reason given.

It will repay us to consider at this point what *meaning* can be attached to the fiction which the mind has constructed for itself, and in what form of proposition that meaning will naturally express itself to the mind at the level of development which we have now reached. More precisely, what can it *mean* to assert that my red resem-

bles your red? I understand at once what is meant by asserting that two reds, both of which are within my own experience, are similar. I compare them by looking from one to the other, and I then find this resemblance given. *And to say that any two things are similar seems to depend for its meaning on the possibility of their being compared.* But where any comparison between two things is impossible and inconceivable, has it any meaning to say that they are similar?

My red and your red exist in different universes which are absolutely cut off from one another. The consciousness of each of us is a separate world. Not only is a comparison of our experiences in fact impossible, but it is difficult even to find any self-consistent meaning which can be attached to the idea of such a comparison. It is not merely a physical impossibility for me to see your red. If that were all, the difficulty might conceivably be some day overcome by the advance of psychological science. But the difficulty is a logical one. If I could see your red, your red would have become mine and, in so far as I saw it, ceased to be yours, and therefore the conditions of the comparison would have vanished. Or to put it in another way. Suppose that I could annihilate the barriers of personality and get into your mind and see your red. Yet it is still *I* who see it. And how do I know then that the red which I see is the same as the red which you see? I cannot know this so long as I remain *I*. In order to know it I must cease to be *I* and become you. But if my personality and yours are thus fused into one, then there are no longer two experiences to compare, and no relation of resemblance can be asserted.

The difficulty of finding an intelligible meaning for our first construction is thus very great. And such a meaning *cannot* be found so long as we attempt to express it in the form of a categorical judgement. So far, the solitary mind has made only categorical judgements. It has asserted 'This is red', 'This red is like (or unlike) that red', 'Red is different from green', and so on. But as soon as the mind enters upon its career of mental constructions a new form

of judgement becomes necessary to express its new insights. It has to *invent* the hypothetical judgement. Let us see how this is.

To say that any two things, even when they are both within my own experience, are similar, implies either that a comparison has been made or at least that it might be, and that *if* it were made the alleged resemblance would be seen. '*A* is like *B*' means either '*A* and *B* have been compared and found alike', or it means 'If we compared *A* and *B* we should find them alike'. An assertion of similarity is necessarily relative to a possible act of comparison. Hence 'My red is like your red' means 'If we could compare our reds we should find them similar'.

The condition, as we have seen, is actually an impossibility. We could not conceivably compare our reds. But the mind does not boggle at this difficulty. It swallows it because it suits its purposes to do so, because unless it does so, it will never be able to build up a common world and a society of minds. We shall find that this is a characteristic, not only of this particular mental construction, but of all those mental constructions which have the character of creating or positing new existences.

We may bring this truth into relation with our previous conclusions by expressing it in another way. To the mind at its present stage, it must be remembered, the *esse* of the given is identical with its *percipi*. An *esse* apart from a *percipi* will be, up to date, inconceivable to it. Now resemblance is one of the concepts of the given, or in other words the resemblance of presentations to one another is, for the solitary mind, a *perceived* relation. Its *esse* will, of course, therefore be its *percipi*. But what has now been asserted by the mind, in this its first construction, is the existence of a relation of resemblance which is not, and cannot be, perceived. I *see* that the two red patches now opposite my eyes are alike. This is a direct act of perception. But if I affirm that my red patch resembles your red patch, this is to assert the existence of a resemblance which no mind in the universe can ever perceive. This assertion of an unperceived existence, even though it be of a relation

and not of a presentation, is implied by our first construction, and is already a transcendence of our old point of view that *esse* and *percipi* are identical.

But how will the mind conceive this new *esse* which is not *percipi*? It cannot break with its past. No sudden and violent *volte face* is possible. For it, existence *is* being perceived. The new kind of existence cannot be out of all relation to the old. It may be an extension of the old, but it cannot contradict it. Now an existence which has no connexion with perception would completely contradict the fundamental notion of existence which the mind has already formed. It would not *be* existence, but something totally different. Hence the mind will express its new point of view in terms of the old. Its new *esse* must still be at least relative to *percipi*. And this means that its new *esse*, though not expressed in terms of an actual *percipi*, will be expressed in terms of a *possible* one. So that now and hereafter when the mind affirms that anything exists unperceived, what it affirms is that 'If . . ., then such an existence would be perceived'.

This, of course, will be disputed by those who still cling to the preconceptions and prejudices of realism. They will assert that the affirmation of an unperceived existence is categorical, not hypothetical. And if the reasonings which I have adduced in the last chapter have not prevailed against those preconceptions, I am not aware that I can do anything further to prove my point. The essentials of our contention may, however, be shortly recapitulated. The initial state of the mind is necessarily solipsistic. The solipsistic or, as we have called it, the solitary mind has no reason whatever to believe in an unperceived existence. Until it gets into communication with other minds, it has no reason to think that its red patch exists when it is unperceived by itself, nor, of course, that any resemblance exists unperceived between its own presentation and that of another mind. Its *esse* is therefore identical with its *percipi*. Even when it gets into touch with other minds, it still never perceives an unperceived existence, nor can it ever infer such an existence from anything which it does

perceive. But there are reasons, namely the necessity of developing its systematic communication with other minds, which force it to invent such an existence. This existence, e.g. the relation of resemblance which we are now considering, is not something that is *factual* or 'actually there'. It is merely supposed or hypothetical, and can be expressed only in the hypothetical form 'If . . ., then it would be perceived'. This follows inevitably from the position that belief in an unperceived existence is a construction. For a construction *is* a supposal. Hence the only way in which our view that all existence is relative to an actual or possible perception can be escaped is by showing that unperceived existence is *not* a construction. And the only way of showing that would be to show that it is either an actual perception or an inference from an actual perception. That an unperceived existence could be perceived is an absurdity. And that it could be inferred from anything that is perceived will be admitted by every competent philosopher to be impossible. Hence our view seems the only feasible one.

In making the assumption of the similarity of the presentations of different minds, the primitive mind is performing a new kind of operation, something quite different from mere awareness of the given, from the concepts of the given, or from any possible inference therefrom. This new operation consists essentially in extending the given in imagination into a region in which nothing is given. It consists in imagining a given where there is none. It is essentially an act of imagination. I see two red patches within my own experience and I note the resemblance between them. This resemblance is itself something given. Taking this experience of a given resemblance as a model, the mind now *imagines* a similar experience where in fact no such experience either is or could be, namely between the presentations of two different minds.

The belief in the similarity of the experiences of different minds is the first of a long series of assumptions which the mind makes on its way to knowledge, the first of its mental constructions. And we shall find that the

characters of this mental construction frequently repeat themselves. These characters are as follows:

(1) The belief which is constructed is such that it can never be either proved or disproved, nor can there ever be any the slightest evidence for or against it. It is pure assumption.

(2) The assumption cannot be given a categorical meaning. It has to be expressed in the form of a hypothetical proposition. If a categorical proposition is used to express it, such a proposition is merely elliptical.

(3) The antecedent clause of the hypothetical proposition expresses an impossible condition, that is, a condition which could not actually exist, but is only a supposal.

(4) The whole mental construction is a work of the imagination which supposes its experience extended into the void where there is in fact no experience. The construction is used to fill up gaps and voids in the given.

(5) The mind creates nothing new. Imagination uses always materials already supplied by the given.

Second Construction.

That the corresponding presentations of different minds are identical, and that there are not many universes, but only one.

Nothing, perhaps would appear so self-evident to the ordinary unphilosophic man as that there is but one universe, and that when he and his friend sit at the dinner table there is before them a single common table, not a separate table for each mind. And yet a little reflection reveals that it is rather the opposite principle which is really self-evident, namely that there exist as many universes as there exist minds. Your red presentation is not my red presentation. We have seen that there is no evidence that they even resemble one another. Much less, then, are they identical. When we both look at what we afterwards regard as one object, say a green book, a green patch is present to your mind, and another green patch is present to mine. There are two, not one. And when a thousand minds are observing the book, there will then exist a thousand green patches. Each mind has its own

world which is separate and absolutely cut off from all others.

Now suppose that the minds *A* and *B* observe together the same series of events, say the appearance of the green book, its being opened at a white page, its being closed again, and finally its being replaced by a red book. The series of presentations then is (neglecting questions of size, shape, &c.) green, white, green, red. *A* and *B* compare notes, and they find that two precisely similar series of experiences have been presented to them. Whatever has happened in *A*'s world has had an exact counterpart in *B*'s world. There are still, of course, two separate worlds. But they run parallel courses, so that whatever happens in one happens in the other also.

A and *B* are like two people sitting in two cinema houses watching two cinema shows. The houses are quite separate from one another. It is impossible to see from one into the other. *A* cannot see *B*'s film, nor can *B* see *A*'s. But they discover that they can shout to each other through the thin walls which separate them and describe to each other the films which they are seeing. When they do so, they find that the films are similar. When a castle appears in one, a castle appears in the same situation in the other. When the heroine faints in one, the heroine faints in the other likewise.

As a matter of fact this description of affairs is not accurate. For there not only appear similarities between the two films but also divergencies. A penny which the hero is presenting to the heroine looks circular in one film but elliptical in the other. And not only this. Sometimes the films diverge altogether. *A* sees in front of him a landscape, while *B* is looking at a seascape. And so on.

These differences are at first ignored, to become later the bases of important modifications in the world which is being built up. *A* and *B*, it must be remembered, are primitive minds each of whom has only just made the discovery that another mind exists. What they seize upon, both as striking in itself and as useful to them, is the *agreement* which they find to exist between their two worlds.

This agreement forms the foundation stone of their future common world. Mere differences would lead them nowhere. If all the worlds of the various minds in existence were wholly different, with no features of agreement, why, then that would be an end of the matter; no common world could be built up; each mind would remain for ever in its private world. Hence it is the agreements on which *A* and *B* fasten as significant to them, ignoring the differences for the present.

A and *B* have discovered, by the first construction, the similarity, but not the identity, of their two worlds. But there are in truth not merely two minds in existence and in communication with one another. There are multitudes, *A, B, C, D, . . . N*. And thus *A* and *B* and the other minds come to believe in the existence of multitudes of universes all alike and all running the same course.

But the multitudes of minds confronted by similar universes will inevitably come to talk, and later to think, *as if* there were only one. For this will present itself as an obvious labour-saving device, a simplification of thought and a convenience of conversation. When *A* and *B* both see a green patch, instead of talking about *my* green patch and *your* green patch, they will come to speak simply of *the* green patch. For there would appear to be no advantage in distinguishing them. And when it is remembered that there are not merely two, but millions of similar universes, this becomes more evident still. It will be excessively tiring to the mind to think of so many universes. To think of them all in terms of one universe, or *as if* there were only one, will be simpler and easier and will serve all purposes. So the belief in a single world becomes established, and the older view that there are many universes is forgotten. Like an organ which performs no function, it decays. The belief in one universe comes in the course of time to appear self-evident.

We have here, once more, an example of the principle of *alternative truths*. The mind is free to make its choice between belief in many universes or one. Both these beliefs would be 'true'. But one is simpler and more

convenient for most of the mind's purposes than the other. And the simpler belief is chosen and embodied into the structure of human knowledge. But if there ever arises any purpose for which it is more desirable to adopt the hypothesis of a multiplicity of universes, that hypothesis will be adopted. The only purpose of this kind which, so far as I can see, is ever likely to arise, is in the writing of a philosophical treatise such as the present. For *our* purpose here—which I venture to say is as legitimately to be regarded as a normal human purpose as any other—it has proved essential to revert to the hypothesis of many universes. And the mind's procedure in all this is strictly analogous to its procedure in the higher regions of science, as for example in the matter of geometries.

The importance, appearing thus early in the history of knowledge, of the principles of simplification and economy of thought may appear to some to warrant a pragmatist theory of knowledge. It is too early as yet in the course of our inquiry to decide this issue. But I will, by way of anticipation, indicate the lines upon which I propose to proceed. The pragmatist would presumably hold that if two alternative hypotheses equally suit the facts, and if one is chosen solely because it is the simpler and more useful, that one alone is true and its rival false. This makes simplicity and utility constitutive of the truth. But I shall hold that the two alternatives are both equally true, though it may be that only one has been adopted into the system of human knowledge. The nature of truth is not determined by practical considerations, such considerations determining only which of two or more rival truths shall be selected for the practical or theoretical purposes we happen to have in view.

This second construction differs to some extent in logical characters from the first. There was no evidence either for or against the resemblance of corresponding presentations. The mind was absolutely unfettered by any kind of fact, and completely free in that sense. Here there is in a sense evidence *against* the view that is adopted, the view namely that there is only a single universe. For it is

plain that *in fact* there are as many universes as there are minds. But the principle which is now adopted in justification of the second construction is that *facts or complexities of fact which can make no conceivable differences in the mind's outlook or in the accomplishment of its practical or theoretical purposes may be ignored and treated as if they were not facts*. When you and I look together at a green book, it may be a fact that there are two green presentations. But it will make no difference to anything in the universe (except perhaps to our epistemology, and for that we can make special provision as has been done here) if we talk and think *as if* there were only one common green patch. To do so will be much simpler and will facilitate the establishment of a common world and a society of minds. *Facts which have no conceivable bearing on anything are for the purposes of knowledge not facts*.

Nor is the second construction only expressible, like the first, in the form of a hypothetical proposition. We do not here suppose that something exists which is not and cannot be perceived. It is only in constructions which have that character that we are compelled to express them in the form 'If . . . , then we should perceive so and so'. In the present case we adopt a precisely opposite principle. We suppose that something which *is* perceived does *not* exist. The construction can therefore be expressed in the categorical form 'There *is* only one universe'.

Nor is there, of course, any question of the extension by the imagination of something given into a void in which in fact nothing is given. That too characterizes only those constructions which suppose something to exist which cannot be perceived.

Nevertheless the second construction is a true construction. For it is a belief which the mind does not find in experience or the given, and does not infer from anything that is experienced. It is a pure assumption.

Finally we must not omit to note the close resemblance which knowledge bears even here in its most rudimentary forms to the forms which we find in the most advanced science. What is called the hypothetical character (or, as I

prefer to call it, the *constructional* character) of scientific knowledge is now well recognized among men of science themselves. Here is a quotation from a recent writer taken almost at random. 'Whether the man of science regards his atoms as having an ultimate reality or not, does not affect the validity of the theory; the theory is just as useful in introducing order and promoting discovery if they are merely polite fictions as if they are desperate realities'.¹ This writer has not envisaged the one further step which has to be taken if we are to make this idea fruitful in epistemology, namely to recognize that 'polite fictions' may enter into the constitution of reality, and form part of 'truth'.

Third Construction.

That the presentations of a mind may continue in existence unperceived by that mind, provided that some other mind perceives them.

The second construction was founded upon the agreement which minds found to exist between their separate private worlds. But it was noted in passing that between the various worlds there is not only a general background of agreement, but also a number of specific differences. And it was noted that these differences would in due course have to be reckoned with. The third construction is based upon such a difference, and is an attempt to meet the difficulties which that difference places in the way of a mind which seeks to carry out consistently the view that there is only one universe.

Suppose that the green book is placed before *A* for one second, is then withdrawn from his sight for one second, and is then finally returned to his field of vision for one second. And suppose that throughout this three seconds the book has been continuously visible to *B*. How do *A* and *B*, on comparing notes, account for what has happened? It is still true that for each of them the *esse* of the green patch is identical with its *percipi*. No doubt in the first construction the idea of an unperceived existence was implied. But it was scarcely explicit, and it applied, in any

¹ *The Mechanism of Nature*, by E. N. de C. Andrade, p. 6.

case, not to presentations, but only to the relations between them. The mind so far has certainly not had this new notion pointedly brought to its notice. And it may be assumed that it continues in the old habit of thought, at any rate as regards presentations. It thinks that a colour patch exists only while it is being perceived. So that when the experiment mentioned above is made *A* will think that a green patch came into existence for one second, and then ceased to exist; that a second elapsed in which no green patch was in existence; and that then *another* green patch came into existence for one second. But *B* will give a different account of the matter. He will say that a single green patch existed continuously for three seconds. When *A* and *B* compare notes this discrepancy is discovered, and especially that *B* observed the green patch during the interval between the two appearances to *A*.

This, clearly, is a difference between the two worlds. *A* and *B* have just decided that their two worlds are one. They concentrated on the agreement and ignored the differences. Now the difficulties in their theory begin to break out. The elements of difference refuse to be ignored. Yet if they are admitted they will cause the break-up of the new theory of a single universe. For that theory depended essentially upon the supposed fact that the two, or the many, universes run parallel courses. The developing mind, then, finds itself in a dilemma. Either it must give up its newly found single universe which it has in common with other minds and go back to its world of private phantasms, or it must somehow explain the difference between its own world and that of its fellow mind consistently with its theory of a single universe. Just as in a scientific theory, when a new fact appears which seems to contradict that theory, either the theory must be abandoned, or the new fact must be explained consistently with it. The developing mind, to meet this difficulty, invents a new construction, namely the third construction which we are now to consider.

The facts to be explained would have caused no difficulty if *A* and *B* had not identified their two worlds as one.

So long as *A*'s universe was regarded as different from *B*'s, the fact that a colour patch appeared in one when it did not appear in the other would require no special explanation. There would be no reason why the two universes should agree. But now that they are supposed to be identical, any differences will have to be explained. An obvious case of this sort has now arisen. *A* and *B* were looking at the green patch. It disappeared from one of their universes, but not from the other. It remained continuously present to *B*'s mind even during the interval when *A* was not seeing it. By the second construction the two universes are one, and it is supposed to be the *same* green patch which both have been observing. If this view is to be retained, there is only one conclusion which *A* can come to. He will be compelled to think 'Since the green patch which appeared to *B* is identical with the one which appeared to me, and since it went on existing in *B*'s mind after it had disappeared from mine, it follows that *my* green patch went on existing in *B*'s mind when it was absent from mine'. And the general conclusion will be drawn that presentations of one mind may continue to exist unperceived by that mind so long as they are perceived by some other mind. This is the third construction.

It will also follow for *A*, of course, that the green patch which he sees in the third second is identical with the green patch which he saw in the first second, and that it has persisted in existence (in *B*'s mind) across the blank interval between the first and third seconds. The former belief of *A* that the first and second appearances of the green patch were two different green patches is superseded. It will be noted that this conclusion is itself a subsidiary construction, although I have not thought it of sufficient importance to erect into a separate construction. Whether you believe that two successive appearances of a green patch (whether separated by an interval or not) are two or one is really a matter of choice. The mind may choose either alternative, and which it chooses is determined by nothing except convenience. It is a matter of perfect indifference

whether I regard this typewriter on which I am now writing as *one* typewriter throughout the hour in which I am using it, or as a succession of sixty typewriters each lasting a minute, or as a succession of three thousand six hundred typewriters each lasting a second. There is no *meaning* in either the assertion of multiplicity or that of unity. There is no meaningful difference between the two ways of looking at the matter. We invariably choose to think of one single continuing typewriter or other object, instead of a succession of momentary ones, simply because it is more convenient, because it is a simplification, not because it is 'truer' or more in accordance with the facts. Both points of view would be equally true, being in fact alternative truths. In the same way, then, when *A* comes to believe that the two green patches, separated by a blank second, are *one*, this is in reality a construction which *A* is under no obligation to make, but which suits his convenience.

But the main construction with which we are here concerned is the new belief that a presentation may go on existing unperceived by the mind to which it originally appeared so long as *some* mind is perceiving it. This will at first sight seem very revolutionary and subversive of *A*'s and *B*'s previous settled views. It may even be denounced by the bishops of the primitive world as contrary to religion. For up till now the fundamental truth of *A*'s and *B*'s universe was that the *esse* of presentations is their *percipi*. This was settled doctrine. It was pristine self-evident truth. It was a dogma which would have lasted for ever if only *A* and *B* had continued to regard their universes as separate. But now, because they have come to think of them as one, they are compelled to admit this new and revolutionary construction.

They will not, of course, admit as yet that a presentation may exist unperceived by any mind at all. They have had no reason to go so far as that. That will come later. But for the present the mind, while admitting that its presentations may continue unperceived by it, will still insist that they must be perceived by some other mind.

Esse is still in that way *percipi*, although that doctrine has received rather a strange twist.

For even this partial admission of an unperceived existence is plainly a paradox. The existence of *my* presentation obviously consists in the fact that it is presented to *me*, i.e. that *I* am aware of it. And to say that it goes on existing while I am not aware of it is like saying that it goes on existing after it has gone out of existence. But either *A* and *B* must swallow this paradox, or they must give up their common world. They cannot have it both ways. Faced with this dilemma they decide to swallow the paradox. They will not give up their common world. The convenience which it introduces into thought and action is too great to be sacrificed. And it is not unreasonable to suppose also that, having found companionship with each other, they fear the sense of loneliness and isolation which would result from their going back to their separate self-enclosed universes. So they accept the view that presentations go on existing when one is not aware of them so long as they exist in some one else's mind.

The first two constructions were adopted by the mind because they simplified its view of the world. The third construction is not made directly for this reason, but because it is forced upon the mind by the previous two. Having accepted the belief that there is only one universe, the mind cannot without self-contradiction hold out against the opinion that my green patch goes on existing in your mind even when I am not aware of it. Thus whereas the motive of the first two constructions was economy and simplicity, the motive of this third construction is consistency. This is frequently illustrated in the history of the development of knowledge. Having accepted one construction we are then compelled to create another in order to avoid a breach of the laws of logic. It is in this way that inference and logic in general perform their chief function in the world of thought, i.e. by ensuring that our various mental constructions do not contradict one another. This is also true in the history of science.

The logical characteristics of the third construction

may now be noted. In the first place it is obvious that it cannot be proved. It is a pure assumption. The identity of the table which I see now with the table which you may see to-morrow when I am not here cannot be perceived, nor inferred from anything which is perceived. There is nothing to compel the mind to accept the third construction, except that it is necessitated by the previous construction which asserted the identity of the many private worlds. No doubt it may be regarded as an inference from that. But as that construction was itself an unprovable assumption, the same character descends upon its present logical consequent.

The third construction may be viewed as consisting of the following steps. Suppose we call A 's green patch during the first second a , B 's green patch during the first second b , and B 's green patch during the following second (in which no green patch is present to A 's consciousness) b' . Then by the second construction

$$a = b.$$

And by the subsidiary construction mentioned above (by which the successive momentary existences of a presentation are identified with one another)

$$b = b'$$

Therefore

$$a = b',$$

or in other words A 's presentation during the first second is identified with B 's presentation during the subsequent second when no green patch is present to A 's consciousness. And this is the third construction.

It will be seen, then, that the third construction only advances beyond the second by adding to it the subsidiary construction. The logical characters of the second construction have already been described, and it remains only to consider those of the subsidiary construction. According to this the successive momentary existences of a presentation are identified with one another. And as already stated, the mind is perfectly free to accept this construction or not as it likes. It makes no difference to the facts whether you call a presentation which continues

over two seconds one presentation or two or a thousand. It would be just as 'true' to regard it as a thousand as to regard it as one. The two or more ways of looking at the matter would constitute so many alternative truths. Each such alternative truth is merely a 'point of view' which the mind chooses to adopt. And it adopts the point of view set out in the subsidiary construction solely because it is the simplest and most convenient.

The subsidiary construction and the third construction do not, like the first construction, posit any new existence. By the first construction it was held that there exists a relation of resemblance between the presentations of different minds, which resemblance is not and cannot be either perceived or inferred. This was therefore the invention of a new existence which the mind assumed to suit its own purposes. And it had therefore the peculiarity that it was accurately expressible only in a hypothetical form. These peculiarities do not appear in the third construction because no new existence is there posited. All that is done by it is to identify two actually perceived presentations. This, of course, implies and stands upon the shoulders of the first construction. It implies an unperceived resemblance between the presentations which are identified, and the assertion of such a resemblance of course possesses the characters of the first construction. But these must obviously be credited to the first construction, not to the third. In so far as the third advances beyond the first it does not possess them. It possesses only characters similar to those of the second construction. It is expressible in a categorical judgement. But it is a true construction in that the content of that judgement is neither perceived nor inferred, but is invented by the mind.

Fourth Construction.

That presentations may exist when no mind is aware of them.

The next stage in the mind's creation of an external world is obviously that *A* should come to believe, not merely that his presentations may continue to exist un-

perceived by him, so long as *B* perceives them, but that they may continue to exist when no one at all perceives them. The human mind has *now* come to believe (I am speaking, not of philosophers, but of the naïve realism of the unreflecting) that green patches and the like exist in the world unperceived by any mind whatever. But there is a gap here which cannot be bridged by any evidence. How do I know that the desk in my office continued existing when I left it behind to-day and went out for a walk? I know it because during that period another member of my family stayed in the room and saw it there. This is precisely the case which is provided for by the third construction by which I believe that my presentation of the desk goes on existing in the mind of another person even when it is absent from my mind. But how do I know that the desk continued in existence when *no one* was in any way aware of it? The answer is that there cannot possibly, in the nature of things, be any evidence of this. There is evidence that things go on existing so long as *some one* perceives them, provided we assume that different people perceive the *same* things. But when *no one* is perceiving a thing, it is clear that no one can give evidence of its existence, and that there cannot be any such evidence. There is not, never has been, and never will be an iota of evidence that the universe or anything in it goes on existing when no mind perceives it or that it existed before there were any minds to perceive it. The belief must therefore be, according to our view, a mental construction.

What other view are we to take of it? That it is a 'primitive belief'? But that is merely to call it a prejudice. 'Belief in the existence of things outside my own biography', says Mr. Russell, 'must from the standpoint of theoretical logic be regarded as a prejudice, not as a well-grounded theory.'¹ When an eminent realist writer says this of his own views, what need have we of further witness?

And yet we must hold that we can do knowledge a better service than calling its foundations prejudices as

¹ *Analysis of Mind*, p. 133.

realists do. We can show that they are mental constructions, and that mental constructions *are* 'well-grounded theories', having their own logical structure and justification, which we shall study in due course.

One of the writers in that famous American manifesto *The New Realism* inveighed against the fallacy of arguing from the fact that it is impossible to find anything which is not known to the conclusion that all things are known. 'The falsity . . . lies in its being a use of the method of agreement unsupported by the method of difference. It is impossible to argue from the fact that everything one finds is known to the conclusion that knowing is a universal condition of being, because it is impossible to find non-things which are not known.'¹ But the 'fallacy' of this is surely obvious. It consists in placing the onus of proof on the wrong side. Since we never find anything which is not perceived, we say that there is therefore no evidence that anything exists unperceived. And since there is no evidence there is no reason why I should believe it unless you prove it. It is up to the realist to prove that things exist unperceived if he asserts that they do so. The burden of proof is on him, and by the express admission of one of his own most eminent philosophers he cannot discharge it except by introducing a prejudice. The realist argument just quoted simply points out that the fact that no unperceived existence can ever be perceived does not prove that no unperceived existence exists. Of course it doesn't. But that is not the point. The point is that no one, realist or not, can prove that they *do* exist, and that therefore there is not the slightest reason to believe that they do. Therefore the belief that they exist must (unless we assert that it is a miraculous revelation, which, although it is inherently unphilosophical, unscientific, and absurd, is what the contentions of the realists in fact amount to) be a mental construction. You can take your choice between miraculous revelation and mental construction. As I have undertaken to follow reason to the end, and not to allow prejudices or miraculous revelations to be dragged

¹ *The New Realism*, p. 12.

in when it happens to be convenient to our beliefs, I choose the second alternative. And I have no hesitation in claiming it as the only rational conclusion, and therefore as a certainty.

But a recent attempt to prove otherwise must be mentioned. Professor Lovejoy in his admirable book *The Revolt against Dualism* inquires what are the grounds on which can be rested our natural belief in realism. He thinks that it not mere 'animal faith'. He quite rightly traces back our belief in realism to our conviction that things go on existing during the intervals between our perceptions. And he proceeds: 'The starting-point of the argument for physical realism, I suggest, is the plain man's normal and reasonable belief that the processes of nature do not stop when he stops noticing them.'¹ And this belief is called a 'primary natural postulate'.² But it seems to me plain that 'the plain man's normal and reasonable belief'—the word 'reasonable' here is not justified and is clearly foisted in to bolster up the case—and 'primary natural postulate' are merely long and round-about phrases which really signify exactly the same thing as 'animal faith' or 'primitive belief'. It is plain that no *reason* is here given for our belief. Or what is given as the ground of our belief is simply the belief itself.

But Professor Lovejoy goes on more valiantly to an attempt to find reasons.

'The belief in the continuance of things or processes between perceptions', he says, 'is not a blank act of faith. . . . It may be said to be—not indeed rigorously verified—but strengthened by one of the most familiar of empirical facts—namely, that the same uniform causal sequences of natural events which may be observed within experience appear to go on in the same manner when not experienced. You build a fire in your grate of a certain quantity of coal, of a certain chemical composition. Whenever you remain in the room there occurs a typical succession of sensible phenomena according to an approximately regular schedule of clock-time; in, say, half an hour the coal is half consumed; at the end of the hour the grate contains only ashes. If you build a fire of the same quantity

¹ *The Revolt against Dualism*, pp. 267–8.

² *Ibid.*, p. 268.

of the same material under the same conditions, leave the room, and return after any given time has elapsed, you get approximately the same sense-experiences as you would have had at the corresponding moment if you had remained in the room. You infer, therefore, that the fire has been burning as usual during your absence, and that being perceived is not a condition necessary for the occurrence of the process.¹

Our belief 'may be said to be—not indeed rigorously verified—but strengthened' by these considerations. These words indicate simply that the author feels the weakness of his case. He has to admit that his argument does not 'rigorously verify', i.e. in other words it does not prove its conclusion. But it is supposed somehow to strengthen it. We shall see that it does not.

The pith of the argument lies in the assertion that 'the same uniform causal sequences of natural events which may be observed within experience *appear*' (italics mine) 'to go on in the same manner when not experienced'. But the trouble is precisely that they do *not* appear. If they appeared they would be perceived. But that they are not perceived and do not appear is just why it is impossible to prove that they exist when not experienced. Thus if the word 'appear' is taken literally here the passage quoted merely makes an incorrect statement. But perhaps 'appear to go on' means simply 'seem to us to go on' or 'we think they go on'. In that case the argument gives no reason at all for our belief but merely states that belief over again. The argument then simply means 'we think, or it seems to us, that the same uniform causal sequences which may be observed within experience go on in the same manner when not experienced' which is certainly no argument at all.

It is plain that the whole of this reasoning is a *petitio principii*. You build a fire in your grate. If you stay in the room for an hour you get the series of experiences *a, b, c, d, e, f, g, h, i*. If you leave the room and return to it in half an hour you get the experience *e*. If you again leave the room and return to it in another quarter of an hour you get

¹ Ibid., p. 268.

the experience *g*. And so on. And you 'infer' that the terms *b*, *c*, *d*, &c., have occurred in your absence. But the only ground on which you can validly infer this is just your belief that things go on in your absence as if you were there. You cannot infer your conclusion from your belief in uniform causal sequences because your belief in uniform causal sequences plainly rests on belief in the general continuity of nature, i.e. the continued occurrence of events when you are not perceiving them. You must *first* come to believe in the continuance of the world when you are not perceiving it before you can come to believe in uniform sequences of causation when you are not perceiving them. Therefore the first of these beliefs cannot be inferred from the second.

We shall show, when we come to consider the category of causality, that it first originates within perceived experience. There are sufficient sequences *a—b* actually perceived to beget the conception of it. The existence of similar causal sequences *outside* actual perception is then assumed on exactly the same grounds as the existence of unperceived presentations is assumed, i.e. by a mental construction based upon the mind's necessity to simplify its world and economize its thought. The construction of the belief in causal sequences outside perception is in fact merely a particular case of the construction of the general belief in an independent external world.

The logical position is thus quite clear. You find causal sequences occurring while you are perceiving things. What right have you to believe that these sequences continue while you are not perceiving them? No argument exists to justify such an inference which would not *also* justify an inference from the general fact that you perceive objects to the conclusion that the objects exist while you are not perceiving them. And as there is admittedly no argument possible which would justify the latter conclusion, neither can any argument possibly justify the former. The truth is that you cannot by any logical acrobatics escape from the absolutely fundamental principle that no amount of perceiving things, whether they are

objects, presentations, causal sequences, or anything else, can ever prove that anything exists unperceived. Professor Lovejoy's argument does not even 'strengthen'—much less 'rigorously verify'—the realist's conclusion. It is completely impotent. It is simply a fallacy. And we return, therefore, to the conclusion that all belief in unperceived existence must be, not an inference, but a mental construction.

It is true, of course, that Professor Lovejoy's argument, as well as that of the writer in *The New Realism*, is expressed in terms of objects, whereas the fourth construction which we are here considering is expressed in terms of presentations. But this clearly makes no difference. The philosopher has reflected that presentations such as green colour cannot, for various reasons, be regarded as belonging to the object when it is not being perceived. He therefore does not talk of presentations continuing in existence when no one is aware of them. He talks of objects. But the primitive mind, whose naïve realism we are here considering, has not got as far on the road of reflection as that. The savage presumably thinks that the trees are still green when no one is perceiving them, i.e. that all his presentations go on existing unperceived. But the philosopher's belief and the savage's belief are merely two different modes of expressing—each in a way suitable to his state of culture—the same fundamental conviction, namely, belief in the independence and continued existence of the external world when unperceived. The logic of the matter is unaltered either way. The principle is still the same, namely, that, as already stated, no amount of perceiving things, whether presentations, objects, or anything else, can ever prove that those things exist unperceived.

Taking it for granted without further argument, then, that belief in the existence of unperceived presentations *is* a construction, our next step must be, as in the cases of the previous constructions, to inquire *why* the mind creates this construction, and what leads it to do so. The general purport of the answer is clear. This construction is but a continuation of the mind's previous tendencies to simpli-

fication and economy of thought. The mind of *A*, we will suppose, has already gone so far as to construct the belief that its presentations continue to exist even when not perceived by itself, so long as some one else is perceiving them. This introduced a wholly new conception of existence. As a solitary mind, *A* was accustomed to think that the existence of everything was identical with appearance to itself. *A* left this point of view behind and came to think that his presentations might still exist in other minds though unperceived by himself. But if they can exist not only outside *A*'s mind, but also outside *B*'s, *C*'s, *D*'s . . . *N*'s minds, is it not possible to think of them as existing outside any mind at all? This thought will at first seem absurd and paradoxical. And there is, of course, no evidence to support it. But the paradox of believing that the presentation of a particular mind can go on existing when that mind is not perceiving it has already been accepted in the third construction. One may as well be hanged for a sheep as a lamb. And to extend this idea until it covers belief in presentations existing unperceived by *any* mind has obvious advantages. It results in great economy and simplification of thought-processes. Once it has flashed across the mind, it is seen that it is possible by means of it to explain the facts that forty green patches appear to forty different people at forty different times separated by time intervals by the simple theory of there being only one green patch in the outer world which goes on existing continuously even when unperceived.

This explanation would not be possible so long as the mind stuck to the view that presentations, to exist, must be perceived by some mind. For in that case there might be inconvenient breaks in the universe. *A*'s green patch would continue to exist provided that *B* became aware of it before *A* closed his eyes. But if *A* closed his eyes first, before *B* became aware of the patch, then it would be impossible to hold that it was the *same* green patch which *A* and *B* saw. The green patch might be passed on like a ball from one mind to another, but there would always be the possibility of some one dropping the ball, in which

case it would go ignominiously out of existence. *A* could pass on his green patch down the line *B, C, D . . . N*. But suppose *D* happened to be asleep at the moment when *C* ceased to see it. *D* might perhaps wake up a few minutes later and see the green patch. But in that few minutes when *no one* was seeing it, it would be necessary to hold that it had gone out of existence, and therefore that *D*'s green patch was not the same as *C*'s, but a new one. And if by any chance all the minds in the universe happened to fall asleep at the same time it would be necessary for them to hold, when they woke up, that an entirely new universe had come into existence.

These results are inconvenient and make it plain to the mind that the view which it has adopted (the third construction) is only a half-way house, and that it must finish what it has begun. It has established with other minds a common world. It has abolished the multitude of universes in favour of one. This introduces a beautiful simplicity into its thought, which would otherwise be uselessly complicated, and it also renders society, the easy communication of mind with mind, possible. But this new simplicity and uniformity are incomplete. They depend on every one keeping awake and alert to see that things in the universe don't get lost and go out of existence. This is clearly unsatisfactory. It would be much better if the universe would go on of itself without some one having perpetually to watch it. From every point of view, therefore, the mind is impelled to adopt this fourth construction and to believe that the universe exists when no one is perceiving it. With this construction the independence of the external world is assured, though still further constructions are necessary before the ordinary naïve view of the world is complete. But we have before us already an independent external world, in that it is now existent whether any one is aware of it or not, and independently of any mind. Thus by a gradual and somewhat adventurous process, by means of dangerous and daring speculations, the self-enclosed solitary mind, for whom nothing existed except the fleeting phantasms of its own private

world, has created for these phantasms an objectivity outside that world, thrust them forth into a strange, cold, mindless wilderness of an outer world, given them permanence and solidity, decreed that they shall have existed before mind itself was born and shall continue to exist after mind is dead. In this way that solid, permanent, everlasting universe was created by our minds.

The logical characteristics of the fourth construction are the same as those of the first. For, like the first construction, it creates in imagination a new existence, namely presentations during periods of time when no mind is aware of them, or, as we might say, unrepresented presentations. These logical characters are the following:

(1) It is entirely unprovable, a pure assumption.

(2) It cannot be expressed in a categorical judgement, but only in a hypothetical judgement of which the antecedent clause is an impossible condition. For what categorical meaning can be attached to a statement that anything exists unperceived? We must remember that, for the solitary mind, *esse* is *percipi*. Even when the mind ceases to be solitary and has built up its common world, its conception of existence will not involve a complete break with the past. It must still think of existence as relative to perception. Existence is what is, or at least *might be*, perceived. Having regard to the fact that *esse* is originally *percipi*, the categorical assertion of an existence wholly out of relation to perception is equivalent to the assertion of an existence which does not exist. And this contradiction can only be avoided by the hypothetical form. To assert that anything exists unperceived can only mean that *if* the circumstances were suitable it would be perceived; it can only accurately be expressed in the form 'If . . . , it would be perceived'.

That the table exists when no one is aware of it means 'If some one were looking in the right direction, he would see the table'. That there exists a side of the moon which is turned away from the earth, and invisible to us, means that *if* one could travel out in space to beyond the moon, and *if* one could take up a suitable position for purposes of

observation, one would see that side of the moon. That atoms exist means that *if* one could magnify sufficiently one would see atoms. This, of course, involves the view that it must be possible to imagine some kind of a model of anything which can reasonably be asserted to exist in the atomic world, a view which physicists are at the moment inclined to dispute. I shall discuss the issue in a later chapter. For the present I will only reiterate that it appears to me impossible to conceive any existence in a manner which does not involve the thought that in suitable circumstances that existence might be perceived. To assert that anything exists surely *means* that it can be perceived if one is in the proper position to perceive it.

(3) The 'if' clause in all these cases represents an impossible condition. It differs from such a proposition as 'If I look at the table, I *shall* see it'. This proposition refers to the future and it is possible that the condition may be carried out, i.e. I may look at the table in the future. And the future existence of the table, when I am looking at it, will be a perceived fact. But 'the table is *now* existing unperceived' means 'if some one were now looking at the table, he would see it'. But by hypothesis no one is now looking at the table, and therefore it is impossible that the condition 'if some one were *now* looking' should be fulfilled. Some one looking in the future will not be some one looking now, and no amount of looking in the future will ever satisfy the condition 'if some one were looking now'. Similarly if we suppose the physically impossible, namely that we shall some day have instruments of magnification sufficient to see atoms, that will show that atoms exist *then*, i.e. when they are seen. It cannot prove that they exist now. And this is the same as saying that the assertion 'atoms exist' is really a hypothetical proposition, the antecedent of which is an impossible condition, the proposition namely, 'if we were now looking through a sufficiently powerful microscope, we should see atoms'. The impossibility of the condition to which we are here referring is not, of course, the crude physical impossibility of making such a microscope, but the logical impossibility

of thinking at the same time both that we are looking and that we are not looking.

(4) The mental construction is a work of the imagination which extends actual experience into the void where no experience in fact exists. We merely imagine the green patch which we now see extended into the periods of time which are void of it in the sense that no one is perceiving the green patch during those periods.

(5) Clearly the mind creates nothing new. It uses the materials already supplied by sense. The table which we do not see is supposed to be exactly like the table which we do see. It is coloured, hard, square, &c. As we are so often reminded, atoms used to be thought of as being like tiny billiard balls. And even now, if we are right, they will have in the end to be thought of as in some way following sensuous patterns. But that is a disputed question which we must leave over to another chapter.

Fifth Construction.

That there exist 'things' or 'objects', which are not identical with presentations; and that the presentations are 'qualities' of the 'things'; and that the 'qualities' may change while the 'things' remain the same.

When a scientific theory is put forward, its function is to explain, or reduce to law and order, a set of facts. If it satisfactorily explains all the relevant facts known in connexion with the particular subject of the theory, it may be taken as a working hypothesis. If, later on, new facts become known which appear inconsistent with the theory, it must either be abandoned as false, or it must be modified in such a way as to bring it into conformity with the new facts.

Now one of the guiding insights of the present investigation is the conviction that knowledge must be all of one piece, that what characterizes the most advanced science will also often be found to characterize that elementary and everyday knowledge of common objects in the external world which even uneducated people possess. It has been the tacit practice both of philosophers and of men

of science in the past to treat our everyday knowledge of the external world as something to be taken almost for granted, as something practically given to us *en bloc*, and as not having been subject to the same elaborate processes of inference, of the building, sifting, and testing of hypotheses, of criticism, of gradual development through continual adjustments to meet new facts, which have notoriously been the conditions of advance of scientific knowledge. *A priori* one might well have suspected that such a view of our everyday knowledge would be erroneous, and that there would be a continuity of method and epistemological character extending from the highest levels of knowledge throughout its lower strata right down to the bed-rock of our immediate sensations. And that this is true is one of the chief convictions which should emerge from our present investigations; in particular that what is known as the 'hypothetical', or, as I prefer to call it, the constructive, character of science extends also to our common perceptual knowledge of external things.

In the fifth construction, which we are about to examine, we have an example, precisely similar to those which are scattered broadcast throughout the fields of science, of a theory being modified to meet new facts which are inconsistent with it in its original form.

The primitive minds which met in communication with one another first noted the fact that their separate private worlds ran parallel to one another. We compared them to persons in separate rooms watching duplications of the same cinema film. This parallel character of the many private worlds was seized upon as a basis for the identification of the private worlds with one another, and their reduction to a single public world.

But there also appeared differences between the many private worlds. One kind of difference appeared when it was discovered that a presentation which existed both in your world and mine, and the two appearances of which we accordingly identified as *one* presentation, might persist in your world after it had vanished from mine. This discovery led to important modifications of the theory of

the common world. It led to the belief that the common world is independent, that presentations can exist unperceived.

And now another set of differences forces itself upon the notice of the primitive minds and threatens once more to destroy their theory of the common world. It is discovered that when a number of minds are simultaneously looking at what they have decided to regard as the 'same' presentation, the private appearances to them of this presentation are in fact not exactly similar. There are slight differences which, in the enthusiasm of their discovery of the common world, had escaped notice. Suppose that they are all looking at the 'same' brown patch (which is what we afterwards come to describe as a penny). The sameness of its character as a brown patch to them all is what had first struck them. A more accurate comparison of notes reveals that it appears as a circle to *A*, as an ellipse to *B*, as a narrower ellipse to *C*, and as a thin band or rectangle to *D*. It is further discovered that to *A* it is so large that it occupies nearly the whole field of his vision, while to *B* it is much smaller, and to *C* and *D* it is so small as to appear a mere speck. (This we afterwards learn to explain by the fact that the various spectators are at varying distances from it. But that is a later story. What we have to concentrate on at the moment is the mere fact of difference.) Differences make their appearance not only in the visual world, but also in the worlds of touch, smell, taste, and hearing. The 'same' sound is very loud to *A*, but scarcely audible to *B*. And so on.

Now these facts are in flat contradiction to the theory of a common world which all the minds have accepted. For how can the 'same' brown patch be at the same time circular, elliptical in various degrees, and rectangular? How can it be several different sizes at once? How can the 'same' sound be both very loud and almost inaudible? A brown patch cannot be several inconsistent shapes at one and the same time. Contradictory characters cannot co-exist in the same presentations. And it looks therefore as if the whole theory of a common world will have to be

abandoned unless it can be so modified as to meet the new facts. Can it be?

There is only one way in which it can be done. The same entity cannot be both the same and different. We must have one entity to bear the differences and another the identity. And this is the solution which the mind adopts. It invents the concept of the 'thing' which is supposed to support, or lie behind, the presentations. The presentations vary. They are different for each person. The 'thing' itself remains self-identical and without contradiction. The presentations become 'appearances' of the 'thing'. The circular, elliptical, and rectangular brown patches are regarded as so many appearances of one single 'object', the penny. This, as it seems, saves a nasty situation. The new conception is applied everywhere universally. The world is no longer made up of presentations, but is full of objects.

The conception is full of difficulties, but these are concealed from the primitive mind by the extreme vagueness with which it is held. *What* is the nature of the 'thing' which underlies the presentations of brownness, shininess, circularity, &c.? There is no reason for supposing it circular since some of its presentations are elliptical, nor elliptical since some of its presentations are circular. Moreover since circularity, ellipticity, and other shapes, are presentations, can any of them characterize what is by hypothesis different from any presentation? Can we attach any intelligible character to the 'thing' at all? Moreover, what is the relation of the 'thing' to the presentation? It is all very well to call the latter sometimes an 'aspect', sometimes an 'appearance', sometimes a 'quality'. But what do these words mean? What *is* an aspect, what an appearance, what a quality? And how are these conceptions related to the conception of the 'thing'?

These and many other difficulties there are, and the hopeless attempt to clarify and solve them has constituted no small part of the occupation in all ages of those philosophers who have failed to recognize that the conceptions which they are thus trying to make consistent do not

represent real facts in the world at all, are not in their nature consistent and clear, but are no more than the makeshift devices of the primitive mind in its efforts to build up a common world. They are no more than essentially vague 'points of view' which that mind invented and adopted for its own ends.

But we are not here concerned with philosophers and their conceptions. We are concerned only with the primitive mind. And that mind cannot be expected to philosophize or think clearly. It holds the conception vaguely and confusedly without sense of its inherent difficulties. Or even if there are difficulties which are apparent to it, it will swallow them rather than adopt the only other alternative which is open to it, namely to give up its hardly found and newly cherished common world. For these reasons too *our* reconstruction of the concept cannot be too precise. It cannot rise to exact definitions, which are not only foreign to the primitive mind but impossible to supply in the nature of the case to a makeshift 'point of view'. We cannot say precisely how the presentation is to be conceived as related to the 'thing'. We cannot give a single clear answer to this question. Sometimes the presentation is conceived as an aspect, sometimes as an appearance, sometimes as a quality. Perhaps the view of it as a quality is the most characteristic of the primitive mind and the most generally employed. And for that reason only we have treated this construction as the construction of the 'thing' and its 'qualities'.

Just as the ether of space was invented without evidence of its existence because it was required to bear the undulations of light, so the 'object' is invented without evidence of its existence because it is required to bear the character of identity amid the changes among presentations.

As soon as this fifth construction has been created, it soon begins to appear that the theory of the 'object' possesses another advantage besides that which originally recommended it. The primary reason which led to its adoption was that when different minds were viewing simultaneously what they had decided to regard as the

'same' presentation, there were nevertheless differences between the appearances of it to different minds. Now not only is the same presentation thus different to different minds viewing it at the same time, but it is also different to the same mind viewing it at different times. The colour patches as we watch them change their colour, their shape, and their position. We watch a red patch turn gradually orange and then yellow. We watch a brown patch change before our eyes from circular to elliptical.

These changes seem to raise difficulties for the subsidiary construction by which it was decided to adopt the view that the successive momentary existences of a presentation are identical with one another and constitute 'one' presentation. There is no difficulty in this so long as the continuing presentation does not change its character. If the circular green patch remains circular and of the same shade of green, and does not move from its place, it is easy to regard its successive existences as existences of the 'same' presentation. But suppose the circular green patch gradually changes its colour, shape, and position. What warrant have we for regarding the whole series as 'one' presentation? If it is red and circular one instant, yellow and square the next instant, it obviously involves a contradiction to call the series the 'same' presentation. For how can a presentation, the essence of which is to be red, be the same as one the essence of which is to be yellow? And how can a square presentation be the same as a circular one?

The new concept of the 'thing' and its qualities has the advantage that it offers a ready solution of these difficulties. For now we can say that the 'thing' remains the same, while its qualities, which are the presentations, change. The leaf turns from green in the summer to yellow in the autumn. In spite of the change of colour we regard it as the 'same' leaf all through. But we could not do this if we had not invented the concept of 'thing' or 'object'. If presentations alone existed, then the green patch (which is the leaf in summer) is clearly *not* the same presentation as the yellow patch (which is the leaf in autumn). There

would be two different leaves, not one. But by means of the concept of the 'thing' we circumvent this. It is true, we say, that the colour has changed. But the colour is not the thing itself. The colour is only a quality of the thing. Hence though the colour has changed, the thing itself has remained the same. Thus arises in general the important conception that *a thing may remain the same and self-identical while all its qualities change*. This is a construction which is convenient and simplifies our view of the world.

We will consider, lastly, the logical characters of the fifth construction.

(1) It possesses the essential character of all true mental constructions in that it cannot be proved true, is not derived from experience, but is simply invented by the mind to fill up a place in the mind's scheme of knowledge. It is obvious, in the first place, that the thing which lies behind the presentation cannot be sensed or directly experienced in any way. For if it could, it would itself be a presentation. Neither can it be inferred from the existence of presentations. Obviously any inference which would seek to pass from the perceptible world of presentations to an unseen and unknown world behind it must needs be a fallacy. It is idle to argue, for example, that presentations must have a cause outside themselves, and that this cause will be the 'thing'. For causation is a relation between things which we find in experience. In other words, it is a relation among presentations. When we say that *a—b* constitutes a causal series we mean that, granted the given conditions, this series is invariable in our actual perceptual experience. Experience warrants us in asserting that the causal relation subsists between our presentations among themselves. But this can give us not the slightest right to say that causes must exist *behind* presentations in a world which is never experienced at all.

It is clear, then, that the conception of the 'thing' is not inferred from anything which we experience, but is simply created by the mind as a fiction which gets it out of the logical difficulties into which it has fallen as a result of its belief in a common world. The object of the fiction is to

give plausibility to the theory of the common world and to get rid of the contradictions which beset that theory when it is seen that it involves identifying a round with an elliptical coloured patch, or, in general terms, that it involves regarding mutually contradictory things as the 'same'.

(2) Constructions which assert the existence of anything take the hypothetical form. For such constructed existence is, of course, unperceived. And the mind's assertion therefore amounts to 'If . . . , we could perceive it'. Logically, this must also characterize the present construction. To affirm that an unperceived 'thing' exists behind our presentations can only mean, if we press it, that *if* we could get behind our presentations we should perceive it. It is true that such an idea is absurd and full of contradictions. If we could perceive the thing behind the presentations it would then itself become a presentation. It would therefore presumably require another 'thing' behind it. And this will lead to an infinite series. Moreover the conception of the possibility of perceiving things apart from their qualities is manifestly absurd, since the qualities of a thing are that by which alone it is possible to perceive it.

But, as already remarked, the whole conception of the 'thing' and its qualities leads to numerous logical difficulties, which have been a standing puzzle to philosophers who insisted on taking it seriously, but are lightly glossed over by the primitive mind which invented this makeshift idea. Nor need we trouble ourselves about this new contradiction. It is in the same boat with the old. The naïve mind holds the conception so vaguely that these difficulties simply do not appear to it. There are two different and inconsistent ways of looking at the matter. The primitive mind attempts to hold to *both* these ways, choosing whichever alternative happens to suit it at the moment. For we may, firstly, say that the thing is quite separate from its qualities, lying as it does behind them and supporting them. We adopt this point of view when we wish to explain how the same object can have contra-

dictory qualities, e.g. how the penny can be both circular and elliptical at the same time. In order to explain this it is necessary to emphasize that the thing itself is something *different* from its presentations, so that it remains unaffected by the contradictory characters of the presentations. The difficulty about this point of view is that it leaves the thing itself absolutely without character and unknowable. It is a pure blank which we can never hope to reach, see, or understand. When this is pointed out, the primitive mind will veer round and adopt the following attitude. It will say that the presentations *are* the qualities of the thing itself, and that in knowing those qualities we are knowing the thing. The leaf is green, and soft, and shaped in such and such a way. When we know these characters, we know the leaf itself, for they are the characters *of* the leaf. When this point of view is adopted the difficulty which then arises is that it is no longer possible to explain the contradictory characters of things. For the separation between the thing and its presentations has been practically abolished, with the result that it is no longer possible to blame the presentations for the differences while preserving intact the sameness of the thing itself. If when we see the penny as circular we are getting knowledge of the real thing, the penny itself, then our neighbour who sees the penny as an ellipse must also be getting knowledge of it. It must therefore be both circular and elliptical at one and the same time. And this is precisely the contradiction which the whole idea of the 'thing' was supposed to avoid. Thus the primitive mind veers between these two contradictory points of view, adopting whichever is convenient at the moment, or confusing the two, and in any case failing to see the pitfalls and contradictions into which it is falling. This, I believe, is a fair description of the attitude of the average unreflecting man of to-day or of any period.

The logic of the matter cannot be pressed any further. The conception which the mind has invented to enable it to preserve its common world intact contains these contradictions immanent within itself. It is at bottom an

inherently self-contradictory idea. Philosophers have spent their lives in writing volumes drawing out to their painful end all the aspects of these contradictions. But they can never be solved, because they are inherently there. They can never be solved except by understanding how they came there, by understanding that the concept of the thing and its qualities is a fiction invented by the mind for its own purposes, and invented without any great logical skill or philosophical insight. Because the mind which invented it was primitive, because the plain men's minds which still use it in their everyday thought to-day are primitive, for this reason these contradictions are there, and for no other reason. And to recognize this fact is the only possible solution of them.

Sixth Construction.

That with the different senses we may perceive the 'same' objects, and that the worlds of the different senses are, in general, identical with one another.

In front of me is a wall. I see it with my eyes, a yellow shiny surface, as it happens. I stretch out my hand and touch the wall. It feels hard and smooth. That the wall which I see and the wall which I feel are one and the same object is certainly part of the plain man's beliefs about the external world. And it is this belief which is asserted in the sixth construction. The construction refers, of course, to all the senses, not only to sight and touch. We think that the rose which we smell is identical with the rose which we see and touch. We suppose that the bell which we hear ringing is the same object as the bell which we see swinging from side to side. We may say, shortly, that we believe in the equivalence of the senses; and this equivalence is the essence of what is affirmed in the sixth construction.

This belief is very far from being self-evident. It is evident, on the contrary, that the facts, so far as they go, are against it. My visual percept of the wall is a shiny yellow patch. My tactile percept of it is a sense of resistance to my hand. Now a yellow patch cannot be identi-

fied with a feel of resistance. The two do not bear even the faintest trace of resemblance to one another. When we identified my red with your red, we at least *supposed* that my red resembled yours and that, if any mind could perceive both, that mind would perceive the relation of resemblance between the two. But it is not possible to suppose that any mind could ever find a resemblance between a colour and a tactile percept. They have nothing in common except the formal fact of existence or being perceived. The scent of the rose, again, bears no resemblance to its visual appearance or its tactile character. The sound of the bell is totally unlike the look of the bell. The taste of a beef-steak has nothing in common with its raw red colour.

The identity of the objects of the different senses with one another cannot therefore be perceived. And to suggest that it can be inferred would be idle. For if by the identity of the objects perceived we mean the identity of the actual percepts, e.g. the colour with the sound, the sound with the smell, and so forth, then clearly no inference from our percepts can establish what is plainly contrary to the percepts themselves. If, on the other hand, we mean by the identity of the objects the identity of the 'things' which underlie the presentations, then too no inference can be drawn. For, as we have already seen, no inference can pass from what we perceive to the supposed 'things' behind them. We cannot even infer the existence of the 'thing', much less its character of identity with some other thing. Hence it is plain that the belief in the equivalence of the senses, being neither perceived nor inferred, must be a mental construction. How then is this construction arrived at?

Suppose that we see an object having a sharp angle or point, say one of the prongs of a pair of scissors. We touch the point and we feel a pricking sensation. We move the pulp of the finger along one edge of the object, over the point, and down the other edge. This gives us a series of tactile and muscular sensations with a pricking sensation about the middle of the series. The acute angle

which we see bears no resemblance whatever to the pricking sensation and the other tactile and muscular sensations which make up the tactile acute angle. The reader will remember that John Locke expressed the opinion that a man born blind, who knew by touch the difference between a cube and a sphere, could not, if he suddenly recovered his sight, tell by looking at them which was the cube and which the sphere. Since Locke's day this has frequently been verified experimentally in the cases of persons who have been born blind and were subsequently operated on for cataract.¹ This emphasizes the fact that the visual angle bears no resemblance to the tactile angle. The two have to become associated in experience before they can be identified.

Experience shows that these dissimilar percepts are correlated. It is found that *the one is invariably a sign of the possibility of the other*. Experience shows that whenever I see a sharp visual angle in an object I can, if I put out my hand, get the experience of the pricking sensation and the other tactile and muscular percepts which make up the tactile angle. Whenever I see a certain kind of red patch which I have come to interpret as a rose, I can, if I scent it with my nose, obtain the familiar odour. Whenever I see the kind of coloured surface which I have come to call a wall, I can, if I put out my hand, obtain the tactile sensation of resistance.

Thus the objects of one sense become associated with the corresponding objects of the other senses. This association goes no way towards proving their identity. But it leads the mind up to the point at which the construction of the identity occurs to it as a simplification.

This step would, however, never be taken if it were not for the previous construction of the 'thing' and its qualities. For it is clearly impossible to hold that a visual presentation is itself identical with a tactile presentation. The two, as we have seen, are wholly dissimilar and exist in different worlds. But when once the mind has come to believe that behind each presentation there exists an un-

¹ *The World of the Blind*, by Pierre Villey (English translation), p. 194.

perceived 'thing', it then becomes possible to identify the 'thing' which lies behind the visual presentation with the 'thing' which lies behind the tactile presentation. There will then be no contradiction. It was seen to be contradictory to hold that the circular brown patch is identical with the elliptical brown patch. This contradiction was got rid of by attributing the identity to the 'thing' behind, while admitting the differences between the presentations. In just the same way it is now possible to identify the visual wall with the tactile wall by attributing the identity to the 'thing' behind them while still admitting that the visual percept is different from the tactile percept. If the same thing can, without contradiction, have two visual appearances, one circular and the other elliptical, why should not the same thing have two appearances, one visual and one tactile? Thus belief in the equivalence of the senses is made possible by the fifth construction, and is in fact no more than an extension of the same idea in a different field.

But it is not yet clear *why* the mind should adopt this construction. In reply to this question we must point once more to the general tendency of the mind to simplify its world and its thought by unifications wherever possible, and thus to reduce the number of objects with which it has to cope. We saw that the many private worlds of different minds were made to coalesce into one. So here, following the same tendency and the same motives of simplification and economy, the several separate worlds of the different senses are made to coalesce into one.

For without this construction we should each of us have to believe that he inhabits half a dozen different universes. There might be one visual world common to all minds, one tactile world common to all minds, and so forth. But the visual universe of us all would be different from the tactile and other universes. The universe of each sense would be wholly cut off from the others.

We could quite well do all our thinking and acting on this basis. It will make no difference whatever to either theory or practice whether we believe in the many worlds

or in the one. If we retain the several worlds of the different senses, we shall still be able to correlate them. We shall still know that whenever we see a visual wall, we can at will feel a tactile wall by reaching out the hand. But just because it makes no difference which view the mind adopts, just because they may be regarded as alternative truths, the mind will adopt the simpler of the two beliefs. It has a passion for unification. It will unify wherever it sees an opportunity. It has already constructed a world common to many minds. It will obviously desire to proceed as far as possible with its simplification and to construct a single world common to all the senses. In the theory of the 'thing' and its qualities it sees a method of justifying this procedure logically to itself.

We need not spend long in describing the logical characters of the sixth construction, for they are similar in all respects to those of the second, third, and subsidiary constructions. Obviously it cannot be proved. You cannot by any conceivable means prove that the wall which you see is the same as the wall which you touch. Experience gives nothing more than that whenever you see a wall, there will also be a tactile wall present to your hand if you put it out. One experience is the *sign* of another. But nothing can prove that they are numerically identical. They are not. They are different. And it is merely a fiction of the mind to invent a common 'thing' behind the two experiences.

The logical principle on which the sixth construction depends is that existences which make no difference of any kind to our world, whether in the theoretical conception we form of it or in our practical reactions to it, may be ignored and treated as if non-existent. In the present construction we do not indeed treat the objects of any one of the senses as non-existent, but the difference between them is ignored. We do not treat as non-existent either the visual wall or the tactile wall, but we treat the relation of difference between them as if it were non-existent.

By means of the six constructions which we have con-

sidered in this chapter there now rises before us something like the familiar world of our everyday experience. We started with a multiplicity of private worlds having no connexion with each other. There was in these worlds nothing permanent and nothing that existed independently of minds. There were no objects, but only presentations, and these presentations might with some show of reason have been accused of being—though I should not use the term myself owing to its very misleading character—mere 'subjective' phantasms or dreams. These presentations went out of existence as soon as one ceased to perceive them. Starting from such, we have arrived, by means of the six constructions, at a world which is not private but common to all minds, a world which is permanent and contains permanent objects, the existence of this world and of these objects being conceived as quite independent of minds. This world possesses, then, the essential characters of the public external world with which we are familiar.

It is true that certain aspects of the everyday world of experience, more particularly its location in a common continuous perhaps infinite three-dimensional space and a common continuous perhaps infinite time, have been left untouched. We shall consider them briefly in a later chapter.

I cannot hope that our reconstruction of the external world in this chapter will have been either complete or accurate. This, I must insist, has been no attempt at a pure *a priori* construction which *must* by an iron necessity have followed precisely these lines and no others. It has been no more than an attempt at a rough freehand sketch, in broad outlines, of the mind's development, emphasizing as much as possible its logical character. I have picked out only what seemed the salient points of the construction, and I have placed them in the order which seemed logically the most feasible. That the mind in its evolution has actually followed precisely the course here laid down would be too much to claim. And I shall be satisfied if the general method of the mind in its world-building activity has been rightly seized, if the logical character and

justification of our beliefs has been correctly shown, and if it has been rendered plausible that at least in some such way as has been here described, and for some such motives and reasons as here given, our beliefs about that world must actually have arisen in the human or pre-human subconsciousness of our ancestors.