

VI—CRITICAL NOTICES.

The Nature of Existence. By J. M. E. McTAGGART. Vol. I. Pp. xxi, 310. Cambridge University Press, 1921.

DR. McTAGGART is one of the few writers of eminence at the present day who seriously believe that important results about the universe as a whole and about our probable position and prospects in it can be reached by pure metaphysical speculation. He is impenitently 'pre-Critical'. His book is of fascinating interest; it is not easy, but, like all his work, it is written with crystalline clearness. In some of the later chapters, *e.g.*, the important ones on 'Determining Correspondence,' the argument is difficult to follow because he has to express in words certain complex logical relations which simply ask for translation into symbols. It is a remarkable achievement for a writer to have kept his head among all these complexities without the help of elaborate symbolism. The book in many ways recalls the best type of Scholastic metaphysics; a comment which in the eighteenth century might have been regarded as an insult, but which will be taken as a very high compliment by all properly instructed persons at the present time. In this volume the arguments and the results reached are all *a priori* and highly abstract; but a second volume is promised in which they will be applied to give probable information about more concrete problems.

I will first give some account of McTaggart's general method. The argument throughout is deductive, and is of the ordinary type. It is not dialectic in Hegel's sense. McTaggart thinks that there is no antecedent objection to such a type of argument as Hegel's, but that the categories do not in fact have the kind of relations needed by that method. The earlier categories are not rejected in whole or in part at later stages; it is merely shown that they cannot be the whole truth and that they must be supplemented in certain definite ways. As regards the premises they fall into two different classes: (a) Ultimate Empirical Beliefs and (b) Synthetic *a priori* Propositions. Only two of the former are used, *viz.*, one to prove that something exists, and a second to prove that the existent is differentiated into parts. It is held that the latter can also be proved *a priori*. An ultimate empirical belief differs from a synthetic *a priori* proposition in that the object to which it corresponds may be private to the person who has the belief (*e.g.*, it may be himself or one of his *sensa*). McTaggart gives at the

end of the book a list of all the notions that are introduced in the course of the argument; it would be desirable to add a list of the premises, with the section in which they first occur. There is evidently no need to defend such a method from the charge either of paradox or of sterility, assuming that the new premises really are self-evident and really are synthetic. The result of the argument is that Reality as a whole or every part of it must have certain properties. It may then be possible to *prove* that certain characteristics which are commonly thought to belong to Reality as a whole or to some parts of it (*e.g.*, Space and Time) cannot do so. And we may be able to suggest that such and such a characteristic with which we are familiar belongs to every part of Reality or to it as a whole, because this is the only characteristic that we know or can imagine which does fulfil the necessary conditions. But at this stage there enters an empirical factor, *viz.*, the *de facto* limitations of our perception and imagination. Hence such positive results are never absolutely certain.

The first two chapters attempt to prove that in dealing with the existent we are dealing with the whole of reality. Neither reality nor existence can be defined, but the latter is a species of the former. Real substances and events (which, as a matter of fact, are substances in McTaggart's sense) exist, and the qualities and relations of existents exist. It is also assumed that the qualities, relations, and parts of existing qualities and relations exist. It has been held that propositions, characteristics in general, and possibilities can be real without existing. In answer to this McTaggart denies the reality of propositions, and deals with alleged real but non-existent characteristics as follows. Let *x* be any characteristic. Then either some existent has *x* or no existent has it. If the former, *x* exists; because it is a characteristic of a real substance. If the latter, every existent is non-*x*. Non-*x* is therefore an existent characteristic. But it contains *x* as a part, and the parts of existent characteristics exist.

This seems to me a most doubtful argument. The word 'part' is highly ambiguous. Is it certain that in *every* sense of part the parts of an existent characteristic exist? Doubtless if men exist and man is a rational animal it is reasonable to say that rationality and animality exist. But *x* is not a part of non-*x* in the sense in which rational and animal are parts of human; for what is the other part? What sort of a characteristic is 'non'?

The question of propositions leads to a theory of truth and falsehood. I think McTaggart somewhat mistakes the grounds on which Meinong, *e.g.*, believed in objectives or propositions. McTaggart always takes the position *against* which he is arguing to be that propositions are what judgments correspond to. He then objects that, since the truth or falsity of the propositions will itself depend on their correspondence or non-correspondence with facts which are not propositions, propositions are a useless *tertium quid*. I am inclined to agree with his conclusion, but I am sure

that most believers in propositions never held that the relation between them and judgments was one of correspondence. Meinong's view simply was that objectives are the *immediate objects* of judgments or Annahmen, just as *sensa* are supposed to be the immediate objects of sensations. Meinong's reason for believing that there are objectives was that all judgments have immediate objects—expressed by the phrase 'that so and so . . . '—and, since many judgments are false, these objects cannot in general be facts. For this reason many of McTaggart's arguments about propositions seem to me to be somewhat beside the mark. The essential question is: Can we deal with false beliefs if we accept nothing but judgments and facts? McTaggart holds that we can. A false belief is defined as one that has non-correspondence to all facts. Now every belief professes to refer to some fact, and it does refer to a certain fact on which its truth or falsehood depends. I take it that the point is that every belief does refer to a definite object either by perception or description. It then asserts something further about this object, i.e., it asserts that the object is not only a constituent of the fact by which it is referred to but also that it is a constituent of another fact of a certain kind. If it is not a constituent of any such fact the judgment is false.

The remaining difficulty that has to be faced by such a theory as McTaggart's is to analyse true beliefs about the non-existent. Such beliefs are always about implications of characteristics. But McTaggart thinks he has proved that all characteristics exist, by the argument about negative characteristics discussed above. Hence any true belief about the implications of characteristics that do not directly belong to any existent does nevertheless correspond to a fact whose constituents are existent characteristics.

The second Book deals with Substance. It is neither analytically nor synthetically *a priori* that something exists. Nevertheless it follows, by an argument like Descartes' *Cogito*, from empirical premises that each person grants for himself. Next, everything that exists must have some quality beside existence. For there are other positive qualities; and, for every positive quality *q* that is denied of any *s*, a negative quality non-*q* must be asserted. (This would only prove that there must at least be negative qualities in every substance.) It is argued, however, that every substance must have at least two positive qualities, viz., existence and the quality of being 'many-qualified'. (The latter, however, is a second-order quality. It has not therefore been proved that any substance need have more than the one positive first-order quality of existing. And the last is merely analytic, since existence is part of the definition of substance.) In § 59, however, a different argument is used. If something existed and had no other property it would be 'a perfect and absolute blank; and to say that only this exists is equivalent to saying that nothing exists'. This argument seems to me to play on the ambiguity of 'nothing'. It would follow that 'nothing' in the sense of 'no thing' exists. But

then we are warned that 'something' here does not mean 'something' but only *etwas*. And nothing (= no thing) is not contradictory to something (= *etwas*). I think that McTaggart would have done better here to make his proposition synthetic and *a priori*. If he is to be taken literally he is making it analytic, and this seems to be a mistake.

It is further assumed that there are at least three incompatible qualities. It follows from this that every substance has at least two negative qualities since it must have the negatives of at least two of these.

Quality as such is indefinable. Qualities are either simple or non-simple. In the latter case they are compound (like 'black-and-blue') or complex (like 'vain,' which involves several simpler qualities in relations other than the merely conjunctive tie). The nature of a substance is the compound of all its qualities of all kinds and orders. It appears to me that the nature of a substance so defined would be an impossible aggregate, since it would have to contain itself as a part. It is strongly asserted that all non-simple characteristics must ultimately be analysable into simple ones, although these might in some cases be infinite in number, and therefore no human mind might be able to perform the analysis. In this, as we shall see, characteristics are sharply contrasted with substances. The chief discussions on this point are to be found in §§ 64 and 175. In the former we are told that 'if we ask what any particular quality is—what we mean when we predicate it of anything—the answer is, in the case of every quality that is not simple, that this depends on what the terms are into which it can be analysed'. In § 175 it is said that 'to be aware of a characteristic is to know its meaning,' and that 'we cannot be aware of a compound characteristic without being aware of the simple characteristics of which it consists'. Lastly the possibility of a characteristic being real and simple depends on its 'being a universal, or being significant'.

Now I would like to begin by pointing out the extreme ambiguity of 'meaning'. (i) There is a person's meaning—'what we mean when we predicate'. (ii) There is the meaning of words. (iii) There is the meaning of characteristics. This is supposed to be of two kinds:—(a) the meaning of simple characteristics, which apparently depends on the fact of their being universal (*cf.* 'being a universal or being significant'); and (b) the meaning of compound characteristics. The latter is assumed to consist of analysability into simple characteristics with meaning in sense. iii (a). McTaggart speaks as if such analysability were the only sense in which compound characteristics could have meaning. This can hardly be true if the meaning of a simple characteristic be just its universality. A simple characteristic does not have meaning in sense iii (b) and does have it in the sense of being universal. But a compound characteristic, whether analysable or not, is universal and therefore would seem to have meaning in the same sense in

which a simple one has it. I suppose therefore that McTaggart's position must really be that universality is necessary but not sufficient for a simple characteristic to have meaning, and that the additional factor—whatever it may be—is not present in compound characteristics which are not analysable into simple parts. Now, so far as I can see, the only factor required to give meaning to a simple characteristic beside universality is that someone shall mean it, *i.e.*, shall take up a certain mental attitude towards it. In fact it would seem best to say, not that simple characteristics *have* meanings, but that they are capable of *being* the meanings of persons. If this be accepted I think McTaggart's argument against characteristics which are not analysable into simple ones might be put as follows: Every characteristic must be capable of being the meaning of someone; a compound characteristic can only be the meaning of a person who knows its analysis into simple characteristics; therefore a characteristic that was not analysable into simple ones could not be meant by anybody; therefore there could be no such characteristic. Now, I am by no means convinced by this argument. I can see that a characteristic must be universal, but I do not see why it need fulfil any other condition. This condition is independent of its analysis. Again it is by no means obvious to me that I cannot mean a compound characteristic without knowing its analysis. I seem to mean something when I use the word 'justice.' But I certainly do not know the proper analysis of justice. To be aware of a complex universal and to be distinctly aware of all its constituents seem to me to be two quite different things, and I do not see why the first cannot happen without the second. If this happens I can *mean* it without being aware of *its meaning* in sense iii (b). If it be incapable of analysis into simple parts it *has* no meaning in sense iii (b). But this does not prevent it from *being* someone's meaning; it places it in no worse position than any simple characteristic, for this equally has no meaning in sense iii (b). Thus to McTaggart's assertion in § 64 that such a compound universal 'would be nothing in particular, and we should mean nothing by predicating it,' I should answer as follows. Such a characteristic would *be* itself; the fact that it had no simple factors would distinguish it from all which did have them; and it would be distinguished from all other characteristics of the same kind by having a different, though equally interminable analysis. Moreover, by predicating it, we should not 'mean nothing' but should mean it; and we can mean it, though it has no meaning in sense iii (b), just as we can mean 'good' though 'good' has no meaning in this sense, if it be a simple predicate. (I think that the fact that simple predicates have no meaning is obscured by the two facts that their names always have a meaning and that people who predicate them have a meaning. The meaning of the word and of the people is the same, *viz.*, the simple predicate, which *has* no meaning but *is* the meaning of the name and of the people who use it. If it still be insisted that even simple predicates have a meaning,

this appears to amount to nothing more than the statement that they are universal. And, in this sense, characteristics with an interminable analysis would equally have a meaning.)

We can now pass to Substance. A substance is defined as an existent which has characteristics but is not a characteristic. In this sense there seems to me to be no doubt of the reality of substances, and no doubt that at one end of every series of existent characteristics there comes a substance. McTaggart points out that many things are substances in this sense to which that name would not usually be given (*e.g.*, a flash of light, or the group composed of a flash of light and a chair). Once it is seen that the admission of substances amounts to little more than the admission that there are particulars and that no complex of universals is a particular, there should be little difficulty in accepting McTaggart's conclusion.

One interesting and important point that is made is the following. If S has the quality P there is a relation between S and P; but this is a derivative relation. S, which is P, is not a complex composed of S and P related by the 'predicative relation'. I think that the distinction drawn by Mr. W. E. Johnson between relations and 'ties' is important here. The connexion between a substance and its qualities seems to be a tie and not a relation in Johnson's sense. Ties cannot be reduced to relations, for the latter require ties.

McTaggart holds that relations are not reducible to qualities, though every quality involves a relation and every relation involves in its terms the quality of standing in that relation. There is thus an infinite hierarchy of derivative qualities and relations. The qualities which a substance has independently of its relations to others are called *Original*. Its original qualities + those that are immediately derived from its relation to others are called *Primary*. There is no reason why two substances should not agree in their original qualities, but McTaggart holds that no two substances can agree in all their primary qualities. This principle he calls the *Dissimilarity of the Diverse*; it seems to me highly plausible. It follows that every substance must have an *exclusive* description. This however may involve a reference to other substances; if this reference cannot be got rid of ultimately, substances will not necessarily have *sufficient* descriptions. A sufficient description of S is one that involves nothing but characteristics. *E.g.*, it would be a sufficient description of S if it were the only substance that has the original quality *q*, or if it were the only substance that has the relation R to substances with the original quality *q*. Now McTaggart holds that it follows from the fact that every substance has an exclusive description that it must have a sufficient description. Suppose A is the substance that has R to B, B is the substance that has S to C . . . and so on. If this series finally returned to A the description would be sufficient for A could be described as the substance which has R to the substance which has S to the substance which has . . . to the sub-

stance which has W to A itself. If the series never returns to A it will be infinite. Now the existence of A requires that of all the substances that are required in its exclusive description. Therefore the series must be completed for A to exist.

So many of McTaggart's arguments depend upon infinite regresses that it is a pity that he has not devoted a chapter to the question which of such series are vicious and how precisely they differ from those which are harmless. The objection here is that the existence of A requires that of all the later terms, and 'therefore requires that the series be completed, which it cannot be' (§ 100). We must remember that it is not the mere infinity of this series to which McTaggart objects. If there were an infinite number of simple substances the regress would be harmless; but he holds that there are no simple substances. McTaggart distinguishes two senses of infinity, *viz.*, the infinity that consists of having an infinite number of simple parts, and that which consists of having no simple parts. I notice that he speaks as if the two sorts exclude each other. So they would, of course, if 'part' were unambiguous; but it is not. McTaggart evidently holds, *e.g.*, that the current mathematical doctrine is that a line consists of an infinite number of simple parts, *viz.*, points. Yet it would be equally true to say that the current mathematical doctrine is that a line has no simple parts. We must distinguish between two senses at least of part and whole, *viz.*, the sense in which a point is part of a line and the sense in which a little line is part of a bigger one. In the first sense we mean by 'part' a term or constituent in a related complex which is of a different nature from its terms. A point is a part of a line in the sense in which McTaggart is part of Trinity. In the second sense we mean by 'part' something which is of the same nature as the whole. I do not know of any other examples of this sense of part and whole except extensive magnitudes. Let us call parts in the first sense 'constituents' and in the second sense 'components'. Then the current mathematical view, as I understand it, is that a line has an infinite number of simple constituents and no simple components. Now the existence of a line implies the existence of all its components; obviously the existence of a line an inch long implies that of its first half inch, and this implies that of its first quarter inch, and so on. And there is no end to this series. Any line is therefore in the position in which a substance would be on McTaggart's view if no substance had a sufficient description. Nor does the fact that a line *also* has an infinite number of simple constituents help matters; for none of these constituents are terms in the series of its components. For my own part I cannot see any objection to the existence of one substance requiring that of an endless series of others, or to the existence of a line requiring that of an endless series of non-simple components. Anyhow the two must stand or fall together. It therefore does not seem to me certain that every substance must have a sufficient description.

The next very important subject is what McTaggart calls

Extrinsic Determination. This is introduced in Chapter XII. and further explained in Chapter XIX. The principle amounts to this. Suppose that there is a certain substance which in fact has at a certain moment the characteristics X, Y, and Z. We can imagine a substance with Y and Z unchanged but with X' substituted for X. But we have no right to suppose that this substance could exist; we have no right to suppose that if one attribute had been different the others could have been the same. We can go further than this. If the substance A has in fact X, Y, and Z and we imagine X absent or different we are *ipso facto* imagining the universe to be different, for it is a characteristic of the actual universe to have the substance A as a part at this moment. We therefore have no right to assume that *any* feature of the universe would have been the same as it actually is. Now one feature of the actual universe is that it contains the substance B; we therefore have no right to suppose that if A were in the least different from what it actually is any other substance B could be the same. The principle then is that if we suppose that any feature, however trivial, in the existent had been different from what it actually is we have no right to suppose that any feature, however pervasive and important, would have been what it actually is. Extrinsic determination is thus universal and reciprocal, and it is a connexion between characteristics which are actually present in substances. Intrinsic determination, on the other hand, is merely an implication between characteristics as such which enables one to infer that if the first is present in one kind of substance the other will be present in the same or a different kind of substance. It is neither reciprocal in general, nor, so far as we know, universal. I think that the principle of extrinsic determination must be admitted, though of course we must be very careful not to slide from the negative statement that we cannot be sure that if anything had been different anything would have been the same to the positive statement that we can be sure that if anything had been different nothing would have been the same. The only practical difficulty that seems to arise is in the application of such ideals as perfect gases or perfectly rigid bodies to the actual world. This is dealt with by McTaggart. We do say: If this lever had been perfectly rigid (which it is not) it would have behaved in such and such a way (which it only approximately did). And we argue from the behaviour of the hypothetically rigid lever to the actual lever. The solution is that we are allowed to conceive hypothetical substances and they will have any attributes that are intrinsically connected with those which we ascribe to them. We cannot be sure that if this had been perfectly rigid it would have been a lever; since 'this,' which is a lever, is not perfectly rigid, and therefore nothing perfectly rigid can be 'this'. Still, it may be easier to see the intrinsic connexions of characteristics in simple hypothetical cases than in the complexities of actual substances. And once we have seen them we can apply them to the actual substances in which these char-

acteristics occur. It must be noticed that this implies a special view about empirical laws. We must assume that the only difference between a law of nature and an *a priori* law is in the way in which they are discovered and proved. We must not hold that an *a priori* law is an intrinsic connexion between attributes as such, whilst a law of nature is something peculiar to the existent world. For if we were to assume the latter we should have no right to suppose that the laws of nature would connect the attributes of hypothetical substances or conversely. It is essential that laws of nature shall not be regarded as properties of any existent substance, *e.g.*, the universe, for then we should have to say that if any characteristic were different from what it is the universe would be different, and therefore we could not be sure that the empirical laws connecting characteristics would be the same. The view that all laws are of the same character has, I think, rarely been combined with the view that no laws are merely properties of the existent universe; most philosophers (*e.g.*, Prof. Bosanquet) who have held the former have combined it with the contrary of the latter.

An important and difficult notion in this book is that of Groups of Substances. A group is a collection of substances or of collections of substances or of both. It is not the same as a class, because it cannot be defined, but can only be described through its members. All groups have several members and no group is a member of itself. Two classes (*e.g.*, animals with cloven-feet and animals that chew the cud) can have the same members, but two different groups cannot have exactly the same members. The members of a class form a group. The members of a group may be related in all sorts of different ways. *E.g.*, Smith, Brown, Jones, and Robinson may be a bridge-party and a business firm. All members of a group are parts of it, but groups have parts which are not members of them. Thus Kent is both a member and a part of the group of English counties, whilst Canterbury and Wessex are parts without being members of this group. In what sense is this true? The meaning of membership of a group is clear; Kent is a member of the group of English counties because in enumerating this group it has to be mentioned; Canterbury and Wessex are not members because they do not have to be mentioned. The great difficulty is as to the sense in which (a) Canterbury, (b) Wessex, and (c) Kent itself is a part of the group of English counties. Canterbury is a part (in the sense of a component) of Kent. If Kent be a part, *in this sense* of the group of English counties, it will follow that Canterbury is a part of this group. But if (a) Kent be not in any sense a part of the group, or (β) if it be a part, in the sense of a constituent but not in that of a component, it will not follow that Canterbury is a part, in any sense, of the group. Jones is a constituent of a bridge-party: Jones's front teeth are components of Jones; it is certainly not obvious that his front teeth are parts of the bridge-party, either in the sense of components or of constituents. We had therefore better turn to the question of Kent. Is Kent a part of the group

of English counties, and, if so, in what sense? Kent is a component of England, so are Canterbury and Wessex. Now in Chapter XVI., where McTaggart discusses compound substances, he does say that a compound substance is each of its sets of parts. Hence England is the group of English counties. If 'is' = 'is identical with' it would of course follow that Kent, Canterbury, and Wessex are all components of this group. For they are all components of England. But 'is' here cannot mean 'is identical with'. For England is also the group of English parishes and extra-parochial places. This is a different group from the group of English counties, and England cannot be identical with two groups that are different from each other. Hence 'is' must here stand for some peculiar relation. Let us call it the relation of 'being adequately analysable into'. Then England is adequately analysable into the group of English counties, and Kent is a member of this group. Wessex and Canterbury and Kent are components of England. Thus there seems to be one sense in which Kent, Wessex, and Canterbury are all parts of the group of English counties, viz., they are all components of a substance which can be adequately analysed into the group of English counties.

We have thus given a meaning to the statement that Kent is not only a member but also a part of the group of English counties. This meaning, however, assumes that we are dealing with a spatial or temporal whole, or something very much like it. The sense in which England is adequately analysable both into the English counties and the Kingdoms of the Heptarchy is that the members of each of these groups exactly fit together to make up England. Most compound substances and most groups, however, are not of this kind. Take the group composed of Smith, Brown, Jones, and Robinson. This is an adequate analysis of a certain compound substance on McTaggart's view. Smith is a part of this group; so are his front teeth; and so is the group composed of Brown and Robinson who are, let us say, brothers-in-law. Now in what sense is this group of four men an adequate analysis of a certain compound substance? Evidently not in exactly the sense in which the counties of England and the Kingdoms of the Heptarchy are adequate analyses of England. Smith, Brown, etc., do not just 'fit together' to make up the substance in question. I think the sense in which this group is an adequate analysis of the substance in question is the following. The substance does include all the relational complexes of which Smith, Brown, Jones, and Robinson are the only constituents, *e.g.*, the bridge-party and the business firm which they form. It also includes many other relational complexes of which they are not, as such, terms, *e.g.*, the complex composed of Smith's teeth and Brown's thumb in their mutual relations. But the constituents of all other complexes contained in the compound substance are either constituents (or components) of Smith, etc., or are complexes whose constituents are some of the four men, or are complexes whose constituents are some of

these men and constituents (or components) of some of them. The original group seems to be all the relational complexes whose constituents are just Smith, Brown, Jones, and Robinson, and nothing else; and Smith is a part of it in the sense that he is a constituent of all these complexes. Smith's teeth are a part of it in the sense that they are a component of a constituent of all these complexes, though they are themselves neither components nor constituents of these complexes, so far as I can see. To work all this out in detail would take us beyond the limits of a review. I will therefore confine myself to the following general remarks. Although McTaggart recognises groups whose members are not components but only constituents, he unfortunately confines himself almost entirely to groups whose members are components when he is discussing the notions of Content, Sets of Parts, etc. This is most unfortunate. A component of a component of x is a component of x ; a component or constituent of a constituent of x is in general neither a component nor a constituent of x . Thus statements which are highly plausible about a whole of composition, like England, and about a group of components, like its counties, are often highly paradoxical when applied to compound substances which are not wholes of composition. I am sure that all this part of the book needs to be carefully worked over again with the distinction between components and constituents kept clearly in view. Even if all components be constituents, many constituents are not components. Here I must leave the matter.

We now come to the divisibility of substance. McTaggart holds it to be self-evident and synthetic that all substances are complex, in the sense of having parts which are substances. This, he holds, narrowly escapes leading us to a contradiction. Happily, however, the contradiction can be avoided by one and only one assumption. This assumption has therefore to be accepted, though it is not intrinsically self-evident; and it leads to highly important and desirable consequences about the universe as a whole. I simply cannot make up my mind as to the self-evidence of this principle. If all substances be wholes of composition I think it would be self-evident. It might be said that this would not prevent them from being also wholes whose constituents were simple. (*Cf.* the line which has no simple parts, in the sense of indivisible lines, and an infinite number of simple parts, in the sense of points.) In the case of lines and durations, however, I am inclined to take Whitehead's view that the genuine parts are simply shorter lines, whilst the points are entities of a different logical type, definable in terms of the components and their relations. It is not, however, clear to me that all substances are wholes of composition, especially if the reality of time be denied, as it is by McTaggart. So I must just take the complexity of all substances as an hypothesis. Why does it lead to difficulties?

Take, *e.g.*, a certain straight line S , three inches long, and let us assume that it has no simple parts. The three inch-lines AB , BC ,

and CD form a set of parts of S. So do the lines AX, XB, BC, CD. The latter set is said to be *sequent* to the former. Since S in fact has an unending series of sets of parts the existence of S requires the existence of each of these sets. S, being a substance, will have a sufficient description. Each set of parts of S, for the same reason, will have a sufficient description. Hence any sufficient description of S requires that there shall be sufficient descriptions of all S's sets of parts. Now often X requires Y without implying Y; this practically means that you can infer from X *that* there must be a definite Y but cannot infer from it *what* in detail this Y must be. In such a case X is said to *presuppose* Y. If you know that ABC is a triangle you know that it is either isosceles or scalene, but you cannot tell which it is. If in fact it is scalene we say that it presupposes scaleness. Hence a sufficient description of S either implies or, if not, presupposes sufficient descriptions of the parts in all S's sets of parts. Now X may presuppose Y and presuppose Z, whilst Z implies Y but Y does not imply Z. *E.g.*, if ABC be in fact an equilateral triangle, its triangularity presupposes both isosceles and equilateral character, but the latter implies the former. In such a case there is no need to mention both presuppositions; it is enough to say that it presupposes the equilateral character. This is called the Total Ultimate Presupposition. Now the alleged difficulty about substances is that their sufficient descriptions must and cannot have a total ultimate presupposition. Let us suppose that L is any set of parts of S, and M a sequent set. A sufficient description of the parts of M implies a sufficient description of the parts of L. Hence the latter is no part of the total ultimate presupposition of the description of S. But every set of parts has another which is sequent to it. Therefore the sufficient description of S has no total ultimate presupposition. The only solution is that there must be a sufficient description of S which *implies* sufficient descriptions of all its parts. This means that there must be some intrinsic connexion between a sufficient description of S and certain sufficient descriptions of all its parts, so that the latter could be inferred from the former. As regards this contradiction I can only say (a) that I am not persuaded that every substance must have a sufficient description, and (b) that I do not see that it has been proved that if X has any presuppositions it must have a total ultimate presupposition. I should have thought that the latter was merely a question of logical elegance. It is inelegant, but not fallacious, to define a square as a figure with four equal sides and four right angles. It is an inelegance that can, and therefore ought to be, avoided. In the present case we have an inelegance which cannot be avoided, but I do not see that this converts it into a logical contradiction. Why could an opponent not equally retort to McTaggart that there must be and yet cannot be a total ultimate implication on his view?

However this may be, McTaggart holds that if contradictions are

to be avoided substances must be subject to a certain sort of relation called *Determining Correspondence*. This is introduced in Chapter XXIV. and exemplified in Chapter XXVI. The reader who finds the abstract account difficult should pass to the examples and then return to Chapter XXIV. in the light of them. I am going to put the definition of determining correspondence in my own words and symbols, because in § 197, where it is first introduced, McTaggart's statements are hard to follow, and one of them (*vis.*, that the relation is one-one) is inaccurate, as the question raised in § 199 shows. It seems to me that the following expresses McTaggart's meaning. Let K represent the relation of a part of a substance to the whole substance. Let κ_x be the class of sets of parts of the substance x . Then the statement $a \in \kappa_x$ means 'a is one of the sets of parts of x ,' and this means that the members of a just fit together to make up x . Let R be a relation of determining correspondence for the substance A . Then there is a set of parts of A (call it α) with the following properties. (i) The domain of R consists of the parts of the members of α , *i.e.*, anything that has R -correspondence to anything is a part of some member of α . We can write this in the form $D'R = K'\alpha$. (ii) The co-domain of R consists of the members of α and the parts of these members; *i.e.*, everything to which anything has R -correspondence is either a member of α or a part of some member of α . This can be written in the form $C'R = \alpha \cup K'\alpha$. (iii) R itself is not (as McTaggart mistakenly says) assumed to be a one-one relation. What is assumed is the following series of propositions. (1) R , with its co-domain confined to α , is one-one, (2) R with its co-domain confined to $R'\alpha$ is one-one, (3) R with its co-domain confined to $R'R'\alpha$ is one-one, and . . . so on. (iv) If x is a member of the set of parts α , and β be any set of parts of A , then the parts of x which have R -correspondence to the members of β form a set of parts of x . This may be written:—

$$\rightarrow \\ x \in \alpha \cdot \beta \in \kappa_A \cdot \supset x, \beta \cdot K'x \cap R'\beta \in \kappa_x.$$

(v) If uRx and vBy , and x is a part of y , then u is a part of v . This may be written in the form $R|K|RCK$. (vi) If some part of x has the relation R to y then there is a sufficient description of y , which includes this fact about y , and implies a sufficient description of the part of x in question.

If all these conditions be fulfilled sufficient descriptions of the members of the particular set of parts α will imply sufficient descriptions of parts within parts of A to infinity. Let us see how this comes about. Suppose, *e.g.*, that α contains just the two parts B and C of A . Then by (i) the domain of R consists of the parts of B and the parts of C . By (ii) the co-domain of R consists of the parts of B , the parts of C , and B and C themselves. Hence R correlates the parts of B and the parts of C with B and C themselves and with their parts. Now B is a member of α , and the group $[B, C]$ is a set of parts of A . Hence from (iv) the parts of B which have the relation R to B and those which have this relation to C

form a *set* of parts of B. But R here has its co-domain confined to α and is therefore one-one; hence we can speak of *the* part of B which has R to B, *the* part which has R to C and so on. [Cf. (iii) (1)]. Thus B breaks up into a set of two parts, one correlated with B and the other with C. These may be written in McTaggart's notation as $B!B$ and $B!C$. For precisely the same reasons C breaks up into a set of two parts, one correlated with B and the other with C. These may be written $C!B$ and $C!C$. Now since $B!B$ and $B!C$ fit together exactly to make up B, whilst $C!B$ and $C!C$ fit together exactly to make up C, and B and C themselves fit together exactly to make up A it is clear that the four parts $B!B$, $B!C$, $C!B$, and $C!C$, fit together exactly to make up A. Hence they are a set of parts of A. We can therefore apply (iv) to them. Take B, to start with, as before. It is a member of α . And the group just constructed is a set of parts of A. Therefore by (iv) the parts of B which have the relation R to the members of this group form a *set* of parts of B. Now here R has its co-domain limited to $R''\alpha$. For $R''\alpha$ is the class of things that stand in the relation R to the members of α . And the members of α are B and C in the present example. Hence $R''\alpha$ is the group $B!B$, $B!C$, etc. Now by (iii) (2) R with its co-domain thus confined is one-one. Hence we can speak, *e.g.*, of *the* part of B which has the relation R to $B!B$. This can be written $B!B!B$ in McTaggart's notation. The result is that B splits up into the set of four parts $B!B!B$, $B!B!C$, $B!C!B$, and $B!C!C$; whilst C splits up into the set of four parts $C!B!B$, $C!B!C$, $C!C!B$, and $C!C!C$. The eight form a new set of parts of A, and the process can be repeated indefinitely.

So far we have not needed to use assumptions (v) or (vi). Assumption (v) is needed for the following reason. Since R in general is not assumed to be one-one it would be possible, apart from (v), that, *e.g.*, $B!B$ (*i.e.*, the part of B that has the relation R to B) should be the same as $B!B!C$ (*i.e.*, the part of B that has the relation R to the part of B that has the relation R to C). But by (v) we see that $B!B!C$ must be a part of $B!B$ since $B!C$ is a part of B. Thus (v) secures that at each stage *each* part of the previous set of parts is divided. Assumption (vi) is of course essential for avoiding the difficulty which McTaggart finds in infinite divisibility. Granted (vi) it follows that a sufficient description of the set α (*i.e.* of B and of C) implies a sufficient description of $B!B$, $B!C$, $C!B$, and $C!C$. On the same assumption this in turn implies sufficient descriptions of $B!B!B$, etc., and so on for every stage in the division.

A class such as α is called a set of *Primary Parts*. It is clear that a set of primary parts of a substance A is $D'R - D'R$, where R is a relation of determining correspondence for A. This means that it is a set of parts to which things stand in the relation R, but which themselves do not stand in the relation R to anything.

Certain further refinements and generalisations are introduced by

$$^1 B!B = (\lambda x)(xKB \cdot xRB); B!C = (\lambda x)(xKB \cdot xRC); \text{ and so on.}$$

McTaggart; but anyone who has followed my account of determining correspondence will easily understand these, and no one who has failed to follow it is likely to understand them at all. The upshot of the matter is that if a substance has a set of primary parts a sufficient description of these will imply sufficient descriptions of sets of sequent parts within parts to infinity, and the alleged contradiction will be avoided.

In Chapter XXVI. McTaggart discusses a number of suggested illustrations, and rejects them all except one taken from perception. B and C are here percipients who perceive each other, themselves, and their parts. It is assumed that they perceive nothing else and that perception is the sole activity that they have. It is further assumed that the part of x which perceives y is a part of the part of x which perceives z , provided that y is a part of z . With these assumptions $B \vdash B \vdash C$, e.g., is the part of B which perceives the part of B which perceives C. Again, $B \vdash B$ and $B \vdash C$ are, respectively, the part of B which perceives B, and the part of B which perceives C; and these are supposed to be a complete set of parts of B. Obviously B and C are percipients whose powers and limitations differ a good deal from ours; but one can anticipate the application that will be made of this example in Vol. II. in favour of a spiritual pluralism.

I will confine myself to two remarks about determining correspondence (1) I am not sure that I clearly understand the important assumption which I have numbered (vi):—'if *some* part of x has the relation R to y then there is a sufficient description of y , which includes this fact about y , and implies a sufficient description of the part of x in question'. Let ϕ be a set of properties of y , which do not include the fact that some part of x has the relation R to y . Let the property ϕ , together with the proposition $(\exists w) \cdot wKx \cdot wRy$, be a sufficient description of y . The latter proposition is equivalent to $yR \vdash Kx$. We will suppose that y is the substance which has the property ϕ and the relation $R \vdash K$ to x , i.e.,

$$y = (\iota z)\{\phi z \cdot zR \vdash Kx\}.$$

Now suppose that this sufficient description of y intrinsically determines a sufficient description of $x \vdash y$. What exactly will this mean? It seems to me that it must mean that there is a certain set of properties ψ , such that (a) anything that has them is identical with $x \vdash y$, and (b) such that if anything (e.g., z) has the property $\phi z \cdot zR \vdash Kx$ we can infer that $x \vdash z$ will have the property ψ ; i.e.,

$$(\exists \psi) : \psi w \equiv_{\text{w}} w = x \vdash y : \phi z \cdot zR \vdash Kx \cdot \supset_{\text{w}} \psi x \vdash z$$

If this be the right interpretation assumption (vi) may be written

$$yR \vdash Kx \cdot \supset_{\text{w}} \therefore (\exists \phi, \psi) : \psi w \equiv_{\text{w}} w = x \vdash y : \phi z \cdot zR \vdash Kx \cdot \supset_{\text{w}} \psi x \vdash z : y = (\iota z)\{\phi z \cdot zR \vdash Kx\}.$$

If this be not the right interpretation I confess I do not know what is. Now a difficulty that strikes me is that McTaggart evidently holds that only *some* sufficient descriptions of y will intrinsically determine a sufficient description of $x \vdash y$, whereas I should

have thought that *any* sufficient description of *y* would have done this. For if ϕ be any such description of *y* it is surely an *exclusive* description of *y* to say that it is 'the part of *x* which has the relation R to that substance whose sufficient description is ϕ .' And this description is also *sufficient*, for it contains no substance but *x*, and *x*—being a primary part—is supposed to have a sufficient description. Does McTaggart mean that there is always some sufficient description of *x*! *y* which does *not* involve the fact that it is the R-correlate of *y*? If so, he ought to have said so. His examples in Chapter XXVI. do not accord with this view of his meaning. His view seems to be there that, if C has a sufficient description, B!C (i.e., the part of B which perceives C) is sufficiently described as the part of B which perceives the substance which has this sufficient description. If this be all the description of B!C that is in view, assumption (vi) becomes trivial, so far as I can see. And it is certainly not meant to be trivial.

(2) Doubtless the intention of McTaggart's argument and his examples is ultimately to suggest that the universe must consist of spiritual substances in certain specially intimate cognitive or other relations. It has struck me (I am probably wrong) that all his requirements would be equally well fulfilled if every substance were (or were correlated with) an ordinary extensive magnitude like a straight line. Take a straight line AB. Bisect it; it consists of the set of parts AX, XB. Bisect these in turn; they consist respectively of the sets AY, YX, and XZ, ZB. The four are a new set of parts of AB. This process of bisection can be continued *ad infinitum*. Moreover, any part in this infinite series of sets of parts has a simple sufficient description. It can be described as, e.g., the *m*th member of the *n*th successive bisection of AB. If then there exists *any* sufficient description ϕ of AB it would seem that every part in this infinite series could be sufficiently described as, e.g., the *m*th member of the *n*th successive bisection of the substance with the property ϕ . Is anything more than this needed, and if so, why precisely?

I must close this long yet inadequate review. McTaggart's book contains, beside what I have noted, admirable discussions on causation and on the basis of induction. I have chosen to describe and discuss its hardest and most original parts. To me it is very difficult to follow highly abstract arguments and to estimate the evidence of highly abstract principles. I therefore express no final opinion as to whether the author has succeeded in proving important conclusions. That he has produced a monument of deep thinking, clear writing, and acute criticism is beyond dispute.

C. D. BROAD.