

CHAPTER XXXV

OSTENSIBLE TEMPORALITY

McTaggart's doctrine of Time is absolutely fundamental to his system. It is the basis of his general theory of Error, and it is essential to the relatively optimistic conclusions which he reaches in Book VII of *The Nature of Existence*. Various parts of the theory are treated in several widely separated parts of Vol. II. In Book V, Chap. XXXIII, McTaggart gives his reasons for denying the reality of Time. The subject is then set aside till we come to Book VI, which deals with Error. The first eight chapters of Book VI are concerned with the positive characteristics of those real series which are misapprehended as series of events. The subject is then again set aside until we come to Book VII, in which McTaggart tries to draw from his theoretical principles certain consequences of great practical importance about the value and destiny of human beings. The first three chapters of Book VII complete the theory of Time by explaining its relations to Eternity. I propose to take the separated parts of McTaggart's exposition together, and thus to give a connected view of his complete theory of Time. This may be divided first into two parts, viz., a *Destructive* and a *Constructive Part*. The *Constructive Part* may be sub-divided into two sections, viz., *Time and Error*, and *Time and Eternity*. In this chapter I shall deal with the *Destructive Part* of the theory. The next Book will be devoted to the two sections of the *Constructive Part*.

I shall begin by stating in my own way what seem to me to be the fundamental peculiarities of temporal appearance. This will form a framework in which we shall be able to place McTaggart's own statements and our criticisms of them.

1. Independent Account of the Phenomenology of Time.

Consider the following sentences: "My grandfather died before I was born", "I am now writing", "I had my breakfast before I began writing this sentence, and I shall have my lunch after I have stopped writing." Everyone who understands English understands these sentences. Everyone is perfectly familiar with facts of the kind which I profess to be recording when I write them. And everyone knows that, even if I should happen to be mistaken or to be lying when I write these sentences, there are innumerable facts of the kind which I profess to be recording when I write them.

Let us now take, by way of contrast, some sentences which record non-temporal facts. The following are examples: "Twice two is four", "If anything were an equilateral triangle, it would be equiangular", "There is no pair of integers such that the ratio of their squares is the same as the ratio of 2 to 1", "37 is a prime number."

We will begin by dividing temporal facts into two classes, viz., those whose constituents all fall within the experience of a single individual, and those whose constituents are not thus restricted. Examples of the first class would be such facts as the following sentences ostensibly record: "I saw a bright flash, and almost immediately afterwards I heard a loud bang", "I have a pain now and it will get worse later on." The following sentences ostensibly record facts of the second kind: "I saw a bright flash shortly before you heard a loud bang", "A very bright comet was near the earth shortly before the Battle of Hastings", "In the remote future the earth will be too cold to support human life." We will call these two kinds of temporal fact "intra-subjective" and "trans-subjective" respectively.

It seems reasonable to believe that intra-subjective temporal facts are simpler and are logically more primitive than trans-subjective ones. It seems certain that each man's knowledge of trans-subjective temporal facts, or his belief in trans-subjective temporal propositions, is in some sense "based upon" his knowledge of temporal facts all of whose

constituents fall within his own experience. It will therefore be wise to begin by confining our attention to intra-subjective temporal facts.

The temporal characteristics of experiences fall into three different, though closely interconnected, sets. (i) Every experience has some duration. It is, in this respect, like a finite straight line and not like a geometrical point. It may be qualitatively variegated or qualitatively uniform throughout its duration, just as a line may vary in colour from one end to the other or be uniformly coloured throughout.

(ii) Any two experiences of the same person stand to each other in a certain determinate form of a determinable temporal relation. Since experiences are not instantaneous, these determinate forms of temporal relation cannot be reduced to the familiar three, viz., earlier than, simultaneous with, and later than. Many other possibilities must be recognised, e.g., earlier than and *not* adjoined to, earlier than *and* adjoined to, partly preceding and partly overlapping, and so on. It is needless to go into elaborate detail; the total number of possible determinate temporal relations between two experiences is finite and can easily be worked out. If *A* and *B* are two experiences of the same person, and no assumption is made about the relative durations of *A* and *B*, there are in fact just thirteen alternative possible relations in which *A* may stand to *B*. Of these, six are independent of the relative duration of *A* and *B*; one, viz., exact temporal coincidence without overlap, can hold only if *A* and *B* are of equal duration; three can hold from *A* to *B* only if *A* is shorter than *B*; and the remaining three can hold from *A* to *B* only if *A* is longer than *B*.

(iii) The third, and much the most puzzling, set of temporal characteristics are those which are involved in facts of the following kind. An experience is at one time wholly in the future, as when one says "I am going to have a painful experience at the dentist's tomorrow." It keeps on becoming less and less remotely future. Eventually the earliest phase of it becomes present; as when the dentist begins drilling one's tooth, and one thinks or says "The painful experience which

I have been anticipating has now begun." Each phase ceases to be present, slips into the immediate past, and then keeps on becoming more and more remotely past. But it is followed by phases which were future and have become present. Eventually the latest phase of this particular experience becomes present and then slips into the immediate past. There is the fact which one records by saying "Thank God (on the theistic hypothesis) that's over now!" After that the experience as a whole retreats continually into the more and more remote past.

There is no doubt that the sentences which I have just been quoting record facts, and that such facts are of the very essence of Time. But it is, of course, quite possible that the grammatical form of these sentences is highly misleading. It may dispose people to take for granted a certain view of the structure and the elements of these facts, and this view may be mistaken and may lead to difficulties and contradictions.

The two aspects of duration and temporal relations are very closely interconnected, and it is in respect of them that there is a close analogy between Time and Space. I shall therefore class them together under the name of "the Extensive Aspect of Temporal Facts". The third feature is absolutely peculiar to Time, and bears no analogy to any feature of spatial facts. I will call it "the Transitory Aspect of Temporal Facts". I will first take these two aspects separately, and will then consider the relations between them.

1.1. *The Extensive Aspect of Temporal Facts.* There is evidently a very close analogy between a person's mental history, taken as a whole, and a cord made up of shorter strands arranged in the following way. The shorter strands are all parallel to each other and to the axis of the cord. No strand stretches the whole length of the cord; the strands are of various lengths and the two ends of any one strand are in general at different positions, respectively, from the two ends of any other strand. Any short segment of the cord will contain segments of several overlapping strands; but two short segments of the cord at some distance apart may be composed of segments of wholly different strands. Some

strands may be practically uniform in colour and texture throughout their length. Others may vary greatly in colour or texture from one end to the other. The former correspond to monotonous experiences, and the latter to variegated and exciting experiences.

This spatial analogy is valid and useful up to a point; but I will now indicate some important ways in which it breaks down. (i) The triadic relation "between" occurs both in a linear spatial series and in a temporal series. We can say both that Bletchley is between Euston and Rugby, and that the experience of writing this sentence is between the experience of eating my breakfast and that of eating my dinner. Nevertheless, there is a profound difference. Temporal betweenness is not fundamental; it is analysable into the relational product of a certain *dyadic* relation taken twice over. The fundamental facts are that eating my breakfast *preceded* writing the sentence, and that writing the sentence *preceded* eating my dinner. The triadic relational fact that writing the sentence is between eating my breakfast and eating my dinner is analysable into the conjunction of these two dyadic relational facts.

Now in the linear spatial series the exact opposite is the case. No doubt one can say that Euston is south of Bletchley and that Bletchley is south of Rugby, and one can compare this with my breakfast preceding my writing the sentence and the latter preceding my dinner. But there is a fundamental difference. The relation "south of" tacitly involves a reference to some third term beside those which are explicitly mentioned, viz., to the sun or to a compass-needle. But the relation "earlier than" is a genuinely dyadic relation which directly relates two experiences of the same person and contains no tacit reference to some third term.

We may sum this up as follows. In a linear spatial series there is no asymmetric dyadic relation intrinsic to the series. The only relation which does not involve a tacit reference to some term outside the series is the partly symmetrical and partly asymmetrical *triadic* relation of "betweenness". This is partly symmetrical because, if *B* is between *A* and *C*, then

it is equally between *C* and *A*; and conversely. It is partly asymmetrical because, if *B* is between *A* and *C*, *C* cannot be between *A* and *B* and *A* cannot be between *B* and *C*. In the temporal series of experiences which constitutes a person's mental history there is a genuine dyadic relation which is intrinsic to the series and involves no reference to any term outside the latter. This is the relation "earlier than". It is the fundamental relation here, and *temporal* betweenness is definable in terms of it. In the temporal series there are two intrinsically opposite directions, earlier-to-later and later-to-earlier. In the linear spatial series there is no *intrinsic* direction. If direction is to be introduced, this must be done *extrinsically*, either by reference to motion along the line (and therefore to time), or by reference to the right and left hands of an external observer, or in some other way.

(ii) Spatial extension and the occurrence of spatial relations *presuppose* temporal duration and a certain determinate form of temporal relation. Shape and size are commonly ascribed to particulars which persist through periods of time and have histories of longer or shorter duration. Since, however, one and the same thing can have different determinate shapes and sizes at different times in its history, we have to divide its history into short successive phases during each of which its shape and size are sensibly constant. Thus we reach the limiting conception of "the shape and size of a certain thing at a certain moment". If the thing is very rigid and usually remains practically unchanged in shape and size over long periods, we often drop the reference to a particular moment and refer to the shape and size which it has at every moment throughout such a long period as "*the* shape and size of this thing". Again, if a thing is elastic, there may be a certain shape and size which it will automatically assume whenever it is free from external distorting or compressing forces. We sometimes refer to this as "*the* shape and size" or "*the natural* shape and size" of such a body, even though the body is at most moments in its history subject to external forces which distort or compress it. I think that it is clear from these remarks that the notions of shape and size, as applied to

bodies, all involve a tacit or explicit reference to temporal characteristics.

We do not very often apply the notions of shape and size to events or processes, as distinct from material things. But we do, e.g., talk of a "long jagged flash of lightning". I think that we talk in this way only when the event or process is so short as to be sensibly instantaneous.

Lastly, we talk of spatial relations between two events only when each is sensibly instantaneous and the two are simultaneous with each other. And we talk of spatial relations between two material things only when the following conditions are fulfilled. The histories of the two things must go on parallel to each other in time. Then each history must be divided into successive instantaneous states, and we must consider the spatial relations between the two bodies at each pair of simultaneous instants in their respective histories. Thus there is a rather elaborate and complicated temporal relation implied in talking of spatial relations between bodies.

Now contrast all this with the extensive aspect of temporal facts. Temporal relations *directly* relate *events or processes*; they do not directly relate the continuants of which events and processes constitute the histories. Again, it is the events or processes which are temporally extended, i.e., which are longer or shorter in the temporal sense. The continuants, of which these events or processes constitute the histories, *endure through* periods of time. And the period through which a continuant endures is measured by the length of its history. Lastly, it is evident that a temporal whole may be composed of parts which do not temporally overlap but are completely successive to each other. Consider a variegated process, such as a single rendering of a certain tune on a piano. It can be regarded as a whole composed of adjoined phases, each of shorter duration, such that each phase wholly precedes one, and wholly follows another, phase of the same process.

I think that I have now made it plain that the unlikeness between spatial and temporal facts is almost as striking as the likeness, even when we confine ourselves to the purely extensive aspect. So far as I can see, all spatial illustrations

even of the extensive aspect of temporal facts presuppose temporal notions. For our lines, etc., are all things which endure through certain periods and have longer or shorter temporal histories. This is no reason for refusing to use such illustrations, if we find them helpful. But it makes it certain that a point will be reached after which they can give us no further help.

1-2. *The Transitory Aspect of Temporal Facts.* We will now turn to the transitory aspect of temporal facts. Here there are two points to be considered, viz., (i) the characteristics of pastness, presentness, and futurity; and (ii) the fact that every event is continually changing in respect of these characteristics. It continually becomes less and less remotely future, then it becomes present, and then it continually becomes more and more remotely past.

The first remark to be made is concerned primarily with language, but it leads on to a conclusion which is not purely linguistic. In all the languages with which I am acquainted there are two different ways of recording such temporal facts as we are now considering. The most usual way is by means of differences of tense in inflected languages, or by means of a temporal copula, which can take three different forms, together with certain temporal adverbs. Thus I should most naturally say "I *had* my breakfast *late*ly", "I *am* writing *now*", "I *shall be* eating my lunch *soon*", and so on. The other way is by means of a single uniform copula and temporal adjectives, which take three different forms, together with certain adverbs. Thus I might have said "Eating my breakfast is just past", "My writing is present", "Eating my lunch is slightly future", and so on. Such expressions are rather unnatural; but they are intelligible, and in some contexts they would be quite normal. Thus it sounds quite natural to say "The next glacial period is in the remote future." The various temporal copulas can be combined with the various temporal adjectives in many ways. Thus we can say "The invention of wireless broadcasting was still future when Queen Victoria died", "This spell of writing will be past (or over) when I am eating my lunch", and so on.

I come now to the point which is not purely linguistic. It is this. By using various forms of temporal adjective we may be able to reduce the number of forms of temporal copula needed in recording temporal facts to the single copula "is". We can, e.g., replace the sentence "I *was* eating my breakfast, I *am* writing, and I *shall be* eating my lunch" by the sentence "Eating my breakfast *is* past, this spell of writing *is* present, and eating my lunch *is* future." But the "is" is the temporal copula "is now", which a person would use if he said of me "He is now writing"; it is not the non-temporal copula which would be used if one said "37 is a prime number" or "Scarlet is a determinate form of red."

The following considerations make this quite plain. Suppose that, on a certain occasion, I utter the sentence "The event *e* is present." And suppose that this utterance records a fact. If the word "is" in it were a non-temporal copula, every utterance by me of the same sentence would record the same fact, no matter whether it were earlier than, contemporary with, or later than this utterance of mine. But actually the only utterances of this sentence which would record the same fact as this utterance of mine would be those which are *contemporary with my utterance*. Earlier or later utterances of this sentence would simply be false; though an earlier utterance of the sentence "The event *e* is future" would be true, and a later utterance of the sentence "The event *e* is past" would also be true. Similar remarks would apply, *mutatis mutandis*, if we had taken as our example a true utterance of the sentence "The event *e* is future" or a true utterance of the sentence "The event *e* is past." It is clear then that there can be no question of getting rid altogether of temporal copulas, and replacing them by a single non-temporal copula and various temporal predicates. This point is highly relevant in connexion with McTaggart's argument against the reality of Time.

1-21. *Pastness, Presentness, and Futurity*. I will now make some remarks about the three temporal characteristics of pastness, presentness, and futurity. The first point to notice is this. If we regard them as three determinates under a

single determinable, they are not on a level, as red, green, blue, etc., are when regarded as determinates under the determinable colour. Pastness and futurity are each capable of an infinite range of different degrees. Presentness is generally thought of as being incapable of variation in degree. (I am ignoring the doctrine of the "Specious Present" for the moment; I shall deal with it later.) Thus the three temporal characteristics are like the three determinates, hot, neutral, and cold, under the determinable of sensible temperature. If we want to put them on a level, we must take as our ultimate determinates presentness, the various determinate degrees of pastness, and the various determinate degrees of futurity.

When we do this, however, we are faced with the following complication. Any experience has some duration; it is like a line and not like a geometrical point. But neither presentness, in the strict sense, nor any absolutely determinate degree of pastness or futurity, can characterise a temporally extended term. Such a term cannot be *present* as a whole. If it is *past* as a whole, any earlier phase of it will have a greater degree of pastness than any later phase; and, if it is *future* as a whole, any earlier phase of it will have a less degree of futurity than any later phase. Thus the notions of strict presentness and of perfectly determinate degrees of pastness or futurity are inseparably bound up with the notion of strictly instantaneous terms, i.e., terms which have temporal position but no duration, and are analogous to geometrical points or unextended particles. I propose to call such terms "event-particles". I think that some event-particles are boundaries of events. And I think that we are able to form the conception of event-particles because we often apprehend events as having boundaries. I will now try to explain what I mean by these cryptic utterances.

I will begin by taking a spatial parallel. Suppose I draw a line in blue ink on a sheet of white paper and look at it. Then I shall apprehend a long thin blue sensum surrounded by a white sensum. Each of these is visibly extended in two dimensions; for the blue sensum, though thin, is visibly of some width. But, in addition, I have an experience which I

can only describe as "prehending the common boundary of the blue sensum and the white sensum". Such boundaries are, in the strictest sense, *lines*, i.e., terms which are extended in one and only one spatial dimension. Very likely the phrases which I have used to describe this experience are in some respects misleading; but I think that everyone will recognise the kind of experience which I am recording by means of them. I do not think that these "boundaries without breadth" are coloured, and I should not be prepared to call them "visual sensa". But anyone who prehends such visual sensa as I have been describing will, *ipso facto*, prehend such a boundary. I think that such experiences are the sensible basis of the notion of lines without breadth. Suppose now that I draw on the same sheet of paper a second ink-line which cuts the first. The two lines, being of finite thickness, intersect in a small *blue area*. But their boundaries, being of only one dimension, intersect in *four colourless points* which are at the four corners of this area. Unless the lines are very thick these four points are, of course, very near together. The thinner the lines, the nearer together are the four points in which their boundaries intersect each other. As the lines approach indefinitely near to zero thickness, the four points of intersection approach indefinitely near to coalescing in a single point. We express this, briefly and inaccurately, by saying that two coloured lines without breadth would intersect in a certain point with position and no magnitude.

Let us now pass from the spatial analogy to the temporal problem which is our main business. Consider the following example. A uniform background of sound has been going on for some time, e.g., the faint hissing of my gas-fire. Suddenly the clock begins to strike. The striking-experience and the hissing-experience both have duration. But it seems to me that, in some important sense of "hearing", I also "hear" the boundary between hissing-without-striking and hissing-with-striking. It seems to me that this has absolutely determinate temporal position in my experience but no temporal extension. I do not think that it has an auditory quality, in the sense in which the hissing and the striking have auditory

qualities, any more than the boundary between a blue sensum and a white sensum which surrounds it has a colour. I am inclined to think that the actual experience of temporal boundaries is the basis of the notion of event-particles.

Consider any process which is either qualitatively uniform or continuously varying in quality. An example of the first kind of process would be the hissing noise-process which is going on while I am hearing my gas-fire throughout the morning. An example of the second would be the noise-process which I hear when I stand on the platform of a railway station and an engine approaches whistling and runs past me. Here there is continuous variation both in loudness and in pitch. Such processes do not fall into successive temporally extended phases audibly adjoined at boundaries. The first may be compared to a uniformly shaded red band; the second may be compared to a red band which varies continuously in shade from one end to the other. Now consider a third kind of auditory experience. Suppose that we have a toothed wheel which can be made to rotate for a period with uniform velocity, and can be made to rotate at different times for the same period with different uniform velocities. Suppose that a card is held with its edge against the teeth of this wheel. Let the experiments which I am about to describe all be conducted against the uniform auditory background of the hissing of a gas-fire.

Let the wheel first be rotated fairly slowly with uniform velocity for a short period. Then I shall hear a discontinuous series of short qualitatively similar noises. Between each will come a short phase of hissing. Each click will be adjoined at its earlier and later ends to a phase of hissing, and the adjunction will audibly take place along a temporal boundary. Now repeat the experiment for the same period with the wheel being rotated uniformly but faster than before. There will be more clicks and more phases of hissing; and each click will be shorter and so too will be each intermediate phase of hissing. Thus the later boundary of any click will now be nearer in time to the earlier boundary of the next click. If this experiment is repeated with the wheel rotating faster and

faster on each occasion, a point will be reached at which the auditory experience changes in character. Instead of a discontinuous series of clicks, each with an audible boundary, there will be a continuous noise-process. We can think of the successive clicks as getting shorter and shorter and more and more numerous, and we can think of the intermediate phases of hissing as doing the same. Thus the later boundary of any click approaches nearer and nearer in temporal position to the earlier boundary of the next click. When the noise-process has become continuous we can think of the successive clicks as having approached to the limit of zero duration, and similarly for the intermediate hissing phases; and we can think of the later boundary of any click as having approached to the limit of coalescing with the earlier boundary of the next click. Thus we form the conception of a continuous uniform noise-process as consisting of a *compact* series of qualitatively similar *event-particles*, each with a different and absolutely determinate *temporal position* and without any *duration*. Similarly, we think of a continuously variable noise-process as consisting of a compact series of event-particles, each with its own absolutely determinate temporal position and sound-quality. The sound-qualities of any two such event-particles will be more and more alike the nearer together the event-particles are in respect of temporal position; and, as the difference in temporal position approaches zero as a limit, so the difference in sound-quality approaches zero as a limit.

I think that I have now given a fairly plausible account of the experiential basis of the notion of event-particles, and of the assumption that any process of finite duration can be regarded as consisting of a compact series of successive event-particles. It is evident that presentness, in the strict sense, and absolutely determinate degrees of pastness or futurity, belong only to event-particles and not to processes. But a process can be said to be past if its later boundary is past; and a process can be said to be more remotely past in proportion as its later boundary has a greater degree of pastness. Similarly, a process can be said to be future if its earlier boundary is future; and a process can be said to be more

remotely future in proportion as its earlier boundary has a greater degree of futurity.

1.22. *Absolute Becoming*. We must now consider the other feature in temporal facts to which there is no spatial analogy, viz., temporal becoming. People have often tried to explain or to represent this in terms of qualitative change or motion. It seems to me quite evident that all such attempts are doomed to failure. Qualitative change and motion presuppose qualitative or substantial persistence, and both presuppose temporal becoming. It will be worth while to consider this point rather more fully.

Let us begin with the attempt to represent temporal becoming by means of motion. Here we are supposed to have a series of event-particles related by the relation of earlier and later. This may be represented by a straight line, which may be uniformly shaded if the process is to be qualitatively uniform, or may be coloured with a continuously variable shade from one end to the other if the process is to be one of continuous qualitative change. The characteristic of presentness is then supposed to move along this series of event-particles, in the direction from earlier to later, as the light from a policeman's bullseye might move along a row of palings.

The following fatal objections can at once be raised. (i) If anything moves, it must move with some determinate velocity. It will always be sensible to ask "How fast does it move?" even if we have no means of answering the question. Now this is equivalent to asking "How great a distance will it have traversed in unit time-lapse?" But here the series along which presentness is supposed to move is temporal and not spatial. In it "distance" is time-lapse. So the question becomes "How great a time-lapse will presentness have traversed in unit time-lapse?" And this question seems to be meaningless.

(ii) Consider any event-particle in the series. At a certain moment this acquires presentness and then loses it again without delay. Before that moment it was future, afterwards it is past. Now the acquisition and the loss of presentness by

this event-particle is itself an event-particle of the second order, which happens to the first-order event-particle. Therefore every first-order event-particle has a *history* of indefinite length; and, at a certain stage of this there is one outstanding second-order event-particle, viz., the acquisition and the immediately subsequent loss of presentness. Yet, by definition, the first-order event-particle which we have been considering has no duration, and therefore can have no history, in the time-series along which presentness is supposed to move.

The two considerations which I have just mentioned would seem to make the following conclusion inevitable. If there is any sense in talking of presentness moving along a series of events, related by the relation of earlier-and-later, we must postulate a *second* time-dimension in addition to that in which the series is spread out. An event which has zero duration, and therefore no history, in the first time-dimension, will yet have an indefinitely long duration and a history in the second time-dimension. Let e_1 and e_2 be two first-order event-particles, and let e_1 precede e_2 by t units of the first time-dimension. Suppose that the second-order event-particle which is e_1 's acquirement of presentness precedes the second-order event-particle which is e_2 's acquirement of presentness by t' units of the second time-dimension. Then the velocity with which presentness moves along the original series will be measured by the ratio t/t' . The numerical value of this ratio is of no importance; it could always be given the value 1/1 by a suitable choice of the units in which we measure time-lapses in the two dimensions. The important point is that, whatever may be the numerical value, the ratio cannot possibly represent a rate of change unless its denominator measures a *lapse of time* and its numerator measures something *other than* a lapse of time in the same time-dimension.

Now let $e_1, e_2, e_3, \text{ etc.}$, be a series of event-particles of the first order, succeeding each other in the first time-dimension. Consider the following set of second-order event-particles, viz., e_1 's acquirement of presentness, e_2 's acquirement of presentness, e_3 's acquirement of presentness, and so on. These might be denoted respectively by the symbols $e_1^2, e_2^2, e_3^2, \text{ etc.}$

These will form a series of second-order event-particles which succeed each other in the second time-dimension. Now, just as e_1 was future, became present, and then became past, so e_1^2 (i.e., e_1 's acquirement of presentness) was future, became present, and then became past. Again, just as e_1 became present before e_2 became present, so e_1^2 (i.e., e_1 's acquirement of presentness) became present before e_2^2 (i.e., e_2 's acquirement of presentness) became present. Lastly, just as e_1 had ceased to be present when e_2 had become present, so e_1^2 (i.e., e_1 's acquirement of presentness) had ceased to be present when e_2^2 (i.e., e_2 's acquirement of presentness) had become present. Thus the series of second-order event-particles, e_1^2, e_2^2, e_3^2 , etc., in the second time-dimension, is precisely like the series of first-order event-particles, e_1, e_2, e_3 , etc., in the first time-dimension, in all those respects which led people to say that presentness "moves along" the first-order series. Such people ought therefore to say, if they want to be consistent, that presentness "moves along" the second-order series too.

Now, if they do say this, we can show by exactly the same arguments as we used at the first stage that a *third* time-dimension must be postulated. Each second-order event-particle, such as e_1^2 , must be supposed to endure indefinitely and to have a history in this third time-dimension. And the acquirement of presentness by e_1^2 will be a third-order event-particle in the history of e_1^2 . It could be symbolised by e_1^3 , which thus stands for "the acquirement of presentness by the acquirement of presentness by e_1 ". It is easy to see that the argument is quite general, and that there is no stage at which one could consistently stop in postulating further time-dimensions and events of a higher order.

It is a great merit of Mr J. W. Dunne, in his two books *An Experiment with Time* and *The Serial Universe*, to have insisted on what is substantially the same fact as this. Unfortunately he persuades himself, by false analogies with infinite series which have limits, that the regress is harmless and that it is sensible to postulate what he calls "the Observer at infinity". Actually the series which we have been con-

sidering could not have a last term or an upper limit, and so the conception of "the Observer at infinity" is the contradictory notion of the last term or upper limit of a series which, from its nature, could have neither. It may be remarked that Mr Dunne's attempted explanation of the alleged fact of pre-cognition, which is highly ingenious, does not require an unending series of time-dimensions. Any reader who is interested in this subject may be referred to my article, *Mr Dunne's Theory of Time*, in *Philosophy*, Vol. x, No. 38.

When one finds oneself launched on an endless series of this kind it is generally a sign that one has made a false move at the beginning. I think that it is easy to see what the false move is in this case. The phrase "to become present" is grammatically of the same form as the phrase "to become hot" or "to become louder". We are therefore tempted to think that sentences like "This event became present" record facts of the same kind as those which are recorded by sentences like "This water became hot" or "This noise became louder." Now a very little reflection is enough to show that this is a mistake.

Any subject of which we can significantly say that it "became hot" must be a more or less persistent substance, which persisted and had temperature before and after the date at which it became hot. The determinate form of its temperature was coldness for an earlier period and hotness for a later period, and the two periods are adjoined phases in its history. Again, any subject of which we can significantly say that it "became louder" must be a more or less prolonged noise-process, which divides into an earlier phase of less loudness adjoined to a later phase of greater loudness. But a literally *instantaneous* event-particle can significantly be said to "become present"; and, indeed, in the strict sense of "present" *only* instantaneous event-particles can be said to "become present". To "become present" is, in fact, just to "become", in an absolute sense; i.e., to "come to pass" in the Biblical phraseology, or, most simply, to "happen". Sentences like "This water became hot" or "This noise became louder" record facts of *qualitative change*. Sentences

like "This event became present" record facts of *absolute becoming*. Now it is clear that qualitative change involves absolute becoming, and it seems to me equally certain that absolute becoming is involved in mere continuance without qualitative change. It is therefore hopeless to expect to treat absolute becoming as if it were a particular case of qualitative change. The endless series of time-dimensions and of orders of events, which such an attempt involves, is the sign and the measure of its futility. I do not suppose that so simple and fundamental a notion as that of absolute becoming can be analysed, and I am quite certain that it cannot be analysed in terms of a non-temporal copula and some kind of temporal predicate.

1.3. *The Specious Present*. We have now considered separately the extensive and the transitory aspects of temporal facts. It remains to say something about the notion of the "Specious Present", which involves both these aspects. McTaggart makes considerable use of this notion, but he always takes for granted that there is some well-known and generally accepted doctrine on the subject. It seems to me that this assumption is dangerous and quite unjustified. I have never seen any account of the Specious Present which seemed even *prima facie* intelligible.

It is obvious that the psychologists who use this phrase are thinking of an important fact about temporal experience, but I find it extremely difficult to inspect and describe accurately the kind of situation which they denote by the phrase. I think that the fundamental fact here is that we have the two following kinds of contrasted experience. We can literally apprehend objects as changing and we can literally apprehend objects as persisting unchanged. Anyone who looks at the face of a watch which has a second-hand will have both kinds of experience going on side by side. The visual *sensa* which he perceptually accepts as the face and the hour-hand and the minute-hand will be apprehended as resting; the visual *sensum* which he perceptually accepts as the second-hand will be apprehended as jumping. Another pair of experiences, in which the change and the persistence which are apprehended *do not*

take the forms of motion and rest respectively, are the following. I prehend the hissing of my gas-fire as a persistent unvarying noise-process. If I stand on a railway platform and an express train rushes through whistling, I prehend the whistling noise as changing in pitch when the engine passes me.

Now the two following propositions are commonly taken to be self-evident. (i) Neither persistence without qualitative change nor qualitative change can be ascribed to a subject which is literally instantaneous. Both involve duration. (ii) Anything which a person prehends at any moment must be present. If we combine these two propositions with the fact that presentness, in the strict sense in which it is on a level with a perfectly determinate degree of pastness or futurity, can belong only to what is instantaneous, difficulties at once arise. If anything which a person prehends at any moment must be present, it must be instantaneous. If it is instantaneous, it can neither persist without qualitative change nor suffer qualitative change. Yet prehendings *are* prehendings as persisting unchanged or as changing. Again, it seems evident from direct inspection that the objects which we prehend at any moment *are not* instantaneous event-particles, and that the notion of an event-particle is a rather elaborate and sophisticated product. The doctrine of the Specious Present seems to be a verbal trick for evading these difficulties. It is asserted that what is prehendings at any moment must have "presentness", in some sense which *does not* entail instantaneousness and exclude duration, as presentness in the proper sense does. And the name "specious presentness" is coined to denote this assumed characteristic.

I propose to begin by substituting for the phrase "specious presentness" the word "presentedness". This is meant to denote a psychological characteristic, which is capable of various degrees from zero up to a maximum. Next, I propose to reject the proposition that anything which a person prehends at any moment must then be present. For it entails directly the false proposition that we prehend event-particles and nothing else. And it entails, at the next move, the false

proposition that we cannot apprehend anything as changing or as remaining unchanged. I shall assume that what a person apprehends at any moment is of finite duration, and therefore that only a single instantaneous cross-section of this total object can be present at that moment. I think that this is what the supporters of the Specious Present theory do in fact mean, though they do not say it very distinctly. We are now in a position to state the theory.

Consider any process of finite duration which a person *P* apprehends at any moment, e.g., a whistling noise. Imagine this to be divided up into shorter and shorter adjoined successive phases, so that in the end it is regarded as a compact series of successive event-particles. Let us make the following assumptions: (i) That a certain one of these instantaneous cross-sections is present, in the strict sense. (ii) That this has the maximum degree of presentedness. (iii) That the degree of presentedness possessed by cross-sections which are earlier than this one tails off to zero at the cross-section which forms the boundary between what *P* is just ceasing to sense and just beginning to retrospect. I think that these three assumptions are implied in all accounts that have been given of the Specious Present. But I think that there is another point about which there is no consensus of opinion. Some people would assert that the cross-section which is strictly present and has maximal degree of presentedness is the later boundary of what is sensed at any moment by a person. Others seem to take a different view. They would hold that there are cross-sections later than this one, and that the degree of presentedness possessed by these tails off to zero at the boundary between what *P* is just beginning to sense and just ceasing to prospect. I think that this latter view is implied by writers like William James who say that the contents of the Specious Present are comparable to a saddle-back.

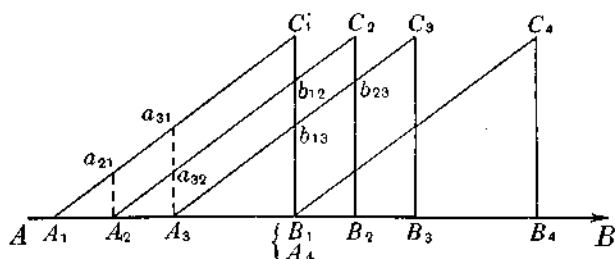
The "saddle-back" theory of course entails that *P* can at a given moment apprehend phases which are still, strictly speaking, future. Both alternatives entail that *P* can at a given moment apprehend phases which are then past. I think

that some people would feel more difficulty in admitting what is peculiar to the "saddle-back" theory than in admitting what is common to both theories. I know of no argument in favour of the "saddle-back" alternative, and so I will ignore it for the future. The alternative which we will consider may be called the "wedge" theory. The following analogy may be helpful. We might compare presentedness to greyness, and we might compare the contents of a single Specious Present to a finite strip of paper which is tinted from its left to its right edge with greyness which varies continuously in shade from pure black at the extreme left to pure white at the extreme right.

What we have so far considered is the extensive aspect of the Specious Present. We must now turn our attention to the transitory aspect, i.e., the succession of Specious Presents. I have seen no satisfactory account of this. Writers on the subject sometimes make statements which would imply that the contents of two successive Specious Presents are adjoined, i.e., that each Specious Present has an immediate successor, and that the later boundary of the earlier coincides with the earlier boundary of its immediate successor. This is quite impossible; for it would involve either repeated sudden jumps from maximal to minimal degree of presentedness (on the "wedge" theory), or a continuous rhythm of maxima and minima (on the "saddle-back" theory). So far as I can see, the only possible way in which to combine the statements made about each individual Specious Present with the continuity of the series of Specious Presents is the following.

For the sake of simplicity I will make the following preliminary assumptions. (i) That all Specious Presents of the same mind are of the same duration. (ii) That the maximum degree of presentedness is the same in all Specious Presents of the same mind. (iii) That the degree of presentedness tails off uniformly from the maximum to zero between the later and the earlier boundary of any Specious Present. None of these assumptions is likely to be exactly true, but this will not affect the general account of the succession of Specious Presents which I am going to give.

Consider the diagram given below:



In this diagram we take the directed line \overrightarrow{AB} to represent lapse of time. The direction left-to-right represents earlier-to-later. On our assumptions any Specious Present can be represented by a right-angled triangle, such as $A_1B_1C_1$, with its base A_1B_1 on the line AB . Here the position of A_1 on AB represents the date of the earlier boundary of this Specious Present, and the position of B_1 represents the date of its later boundary. The length A_1B_1 therefore represents the duration of the Specious Present. The perpendicular B_1C_1 represents the maximum degree of presentedness. The perpendicular to A_1B_1 from any point in AB , such as A_2 , which is intermediate between A_1 and B_1 , will cut the line A_1C_1 at a certain point which we will label a_{21} . The length A_2a_{21} , thus intercepted, will represent the degree of presentedness of an instantaneous cross-section of the content of the Specious Present $A_1B_1C_1$ at the date represented by A_2 .

Since there is continuity in our experience in respect of degree of presentedness, there can be no question of any Specious Present having an *immediate* successor, as, e.g., the integer 2 has for its immediate successor the integer 3. The series of successive Specious Presents must be *compact*, like the series of rational fractions; i.e., between any two Specious Presents, such as $A_1B_1C_1$ and $A_3B_3C_3$, there will always be an intermediate one, such as $A_2B_2C_2$. Naturally this fact cannot be represented in the diagram. We must therefore remember that, between any two Specious Presents represented in the diagram, there will always be an infinite number of others not represented. Now the contents of any two

Specious Presents which are near enough to each other in time will partially, but *only* partially, overlap. This is shown in the diagram by the fact that any two of the three triangles, $A_1B_1C_1$, $A_2B_2C_2$, and $A_3B_3C_3$, have an area in common.

Let us now consider some consequences of this. (i) The slice between A_1 and A_2 is preheded in the Specious Present $A_1B_1C_1$ with a range of presentedness from zero to A_2a_{21} . It is not preheded at all in either $A_2B_2C_2$ or $A_3B_3C_3$. It is *wholly past* with respect to them, and is at most *retrospected* in them. (ii) The slice between B_2 and B_3 is preheded in the Specious Present $A_3B_3C_3$ with a range of presentedness from B_2b_{23} to the maximum. It is not preheded in either $A_1B_1C_1$ or $A_2B_2C_2$. It is *wholly future* with respect to them, and is at most *prospected* in them. (iii) The slice between A_2 and A_3 is preheded in $A_1B_1C_1$ with a range of presentedness from A_2a_{21} to A_3a_{31} . It is preheded in $A_2B_2C_2$ with a range of presentedness from zero to A_3a_{32} . It is not preheded in $A_3B_3C_3$. It is *wholly past* with respect to this, and is at most *retrospected* in this. (iv) The slice between B_1 and B_2 is preheded in $A_2B_2C_2$ with a range of presentedness from B_1b_{12} to the maximum. It is preheded in $A_3B_3C_3$ with a range of presentedness from B_1b_{13} to B_2b_{23} . It is not preheded in $A_1B_1C_1$. It is *wholly future* with respect to this, and is at most *prospected* in this. Lastly (v) the slice between A_3 and B_1 is preheded in all three of the Specious Presents. In $A_1B_1C_1$ it is preheded with a range of presentedness from A_3a_{31} to the maximum. In $A_2B_2C_2$ it is preheded with a range of presentedness from A_3a_{32} to B_1b_{12} . And in $A_3B_3C_3$ it is preheded with a range of presentedness from zero to B_1b_{13} .

Now consider an instantaneous cross-section at the date which is represented by the point B_1 . This will be preheded in $A_1B_1C_1$ with the maximum degree of presentedness. It will be preheded in every one of the compact series of Specious Presents between $A_1B_1C_1$ and $A_4B_4C_4$ (where A_4 is the same moment as B_1) with steadily decreasing degree of presentedness. Finally, it will just not be preheded in $A_4B_4C_4$, because its degree of presentedness will just have sunk to zero in it.

Passing to the other extreme from an *instantaneous* event-particle, we see that a phase whose duration is that of a single Specious Present, such as the slice between A_1 and B_1 , can just and only just be prehended as a temporal whole at a moment. It can be prehended as such a whole in one and only one Specious Present, viz., $A_1B_1C_1$. Any phase of less duration, such as the slice between A_3 and B_1 , will be prehended as a temporal whole in every one of a compact series of successive Specious Presents. The first of them is $A_1B_1C_1$, and in this the *later* boundary of the phase has *maximum* degree of presentedness. The last of them is $A_3B_3C_3$, and in this the *earlier* boundary of the phase has *zero* degree of presentedness. The phase will be prehended as a temporal whole in these two Specious Presents, and in all those which come between them, but with steadily decreasing average degree of presentedness.

We can now sum up our account of the theory of the Specious Present as follows. For each human being there is a certain characteristic short period T which has the following properties: (i) Any phase which begins at any moment t_1 and ends at any moment t_2 , such that $t_2 - t_1$ is less than T , can be prehended as a temporal whole throughout a period which begins at t_2 and ends at t_3 , where $t_3 - t_1 = T$. (ii) At any moment at which this phase is prehended as a temporal whole its degree of presentedness will tail off uniformly from a maximum at its later boundary to a minimum at its earlier boundary. (iii) During the period throughout which the phase continues to be prehended as a temporal whole its average degree of presentedness will steadily diminish, and at the end of the period the degree of presentedness of its earlier boundary will have sunk to zero.

There is one important consequence of this theory which I want to make quite explicit because many people would regard it as highly paradoxical. It is this. The period during which any phase, short enough to be prehended as a temporal whole, is so prehended *never* coincides with the period occupied by this phase. The two periods do not even overlap. Their relation is that of *adjunction*. For the period throughout

which this phase is prehended as a temporal whole *begins* at the moment when the period occupied by the phase *ends*. Thus the prehended phase is completely past at the moment when it first begins to be prehended, and it is getting more and more remotely past throughout the period during which it continues to be prehended as a temporal whole. The steadily diminishing average degree of presentedness with which the phase is prehended is the sign and the measure of its steady retreat into the more and more remote past.

I take it that our prehension of the contents of each Specious Present as having *presentedness* is the experiential basis of our notion of *presentness* in the strict sense. Presumably the tailing-off in degree of presentedness to zero from the latest to the earliest boundary of the content of each Specious Present is one factor in the experiential basis of our notion of temporal transition. A second factor is the continuous series of overlapping Specious Presents. And the third factor is the way in which a phase, short enough to be prehended as a temporal whole throughout a series of successive Specious Presents, steadily diminishes in degree of average presentedness, so that it first ceases to be prehended as a whole and eventually ceases to be prehended even in part. These three factors can be distinguished on reflection; but they are, of course, inseparably bound up with each other in actual experience.

2. McTaggart's Account of the Phenomenology of Time.

We are now in a position to discuss McTaggart's account of the phenomenology of Time in Chap. XXXIII of *The Nature of Existence*. He begins by talking of series of "temporal positions". He does not define or describe this rather ambiguous term; but in §306 he tells us that "the contents of any position in time form an event". We are also told that "the varied simultaneous contents of a single position are . . . a plurality of events". In most of the subsequent discussion he talks of series of *events*, and not of series of temporal positions. There is, in fact, a good deal of verbal looseness at the beginning of the chapter; but it is not worth while to

criticise it in detail, since we can state the essential parts of his doctrine quite clearly in our own way. This I will now do.

2.1. *B-Series and A-Series.* (i) *Prima facie* any two event-particles, X and Y , are either simultaneous or successive. Simultaneity is a symmetrical transitive relation. All the event-particles which are simultaneous with a given event-particle may be said to have "the same temporal position" as it and as each other. Succession is an asymmetrical transitive relation. If X and Y be two successive event-particles, then either X is earlier than Y or Y is earlier than X . We can thus classify event-particles into a series of successive sets of mutually simultaneous event-particles. Each such set may be called "the contents of a single temporal position". Of any two such sets one is earlier than the other. And, if S_1 be earlier than S_2 , and S_2 be earlier than S_3 , then S_1 will be earlier than S_3 . McTaggart gives the name of a "*B-series*" to any such series of successive sets of mutually simultaneous event-particles. Thus the generating relation of a *B-series* is the relation "earlier than".

(ii) Now *prima facie* we have also to consider another kind of temporal characteristic beside the relations of simultaneity and succession. This is the characteristic of pastness, presentness, and futurity. McTaggart uses the term "*A-series*" in connexion with these characteristics. I think that there is a certain ambiguity in the application of the term "*A-series*" which I will now remove.

(a) There is what I will call the "series of *A-characteristics*". This is simply the series formed by the various possible degrees of pastness in decreasing order of magnitude, the characteristic of strict presentness, and the various possible degrees of futurity in increasing order of magnitude. Except for the fact that it is compact it might be represented by the series of negative integers, the signless integer 0, and the series of positive integers. Thus

... -3, -2, -1; 0; 1, 2, 3...

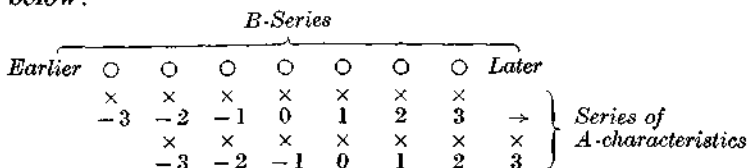
Pastness *Futurity*

(b) At any moment any term in a *B*-series will be characterised by one and only one term in this series of *A*-characteristics. Conversely, at any moment any term in the series of *A*-characteristics will characterise one and only one term in any *B*-series. In virtue of this fact we can say, if we like, that the terms of a *B*-series constitute also at any moment an "*A*-series". They constitute a *B*-series in virtue of standing in the relation of earlier and later to each other. They constitute an *A*-series in virtue of their one-to-one correlation at every moment with the terms of the series of *A*-characteristics.

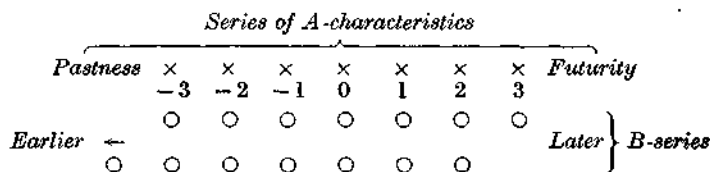
We will now consider this correlation in greater detail. The relation "earlier than" has magnitude, like the relation "left of". The Battle of Marathon precedes the Battle of the Somme much more than the Battle of Waterloo does. Now every difference in magnitude of the relation "earlier than" is correlated with a difference in the degree of the *A*-characteristics possessed by the related events. (For this purpose we must count futurity as similar to pastness but of opposite sign. And we must take "difference" to mean "algebraical difference".) Every *one* event-particle is continually changing in respect of its *A*-characteristics; it is continually getting less and less remotely future, then present, and then more and more remotely past. But any *two* event-particles in the same *B*-series always keep the *same algebraic difference* between their *A*-characteristics. They are *always* simultaneous or *always* successive. And, if they are successive, the earlier *always* precedes the later by the same amount. They might be compared to two sounds, each of which continually varies in absolute pitch, which nevertheless always keep the same relative pitch.

If an attempt is made to picture the temporal facts by means of an analogy with motion, there are two alternative ways open to us, as McTaggart points out in the footnote on p. 10 of Vol. II of *The Nature of Existence*. (a) We can imagine the *B*-series standing still as a rigid whole, and the series of *A*-characteristics sliding along it as a rigid whole in the

direction of *earlier to later*. This is illustrated in the diagram below:



Or (b) we can imagine the series of *A-characteristics* standing still as a rigid whole, and the *B-series* sliding along it as a rigid whole in the direction from greater to less futurity, through presentness, to greater and greater pastness. See the diagram below:



2.2. *Time, Change, and the two Series.* At this point the following questions may be raised. How are the *A-characteristics* and the *B-characteristics* related to each other? And how are they related to the general notions of Time and Change? If the *A-characteristics* and the *B-characteristics* are logically independent of each other, it would be logically possible to reject either as delusive and to keep the other. If one depends on the other, but the dependence is not mutual, we might accept the more fundamental whilst we rejected the less fundamental as delusive. But, if we rejected the more fundamental as delusive, we should have to reject the less fundamental along with it. Again, are both kinds of characteristic essential factors in the notion of Time? If so, the rejection of either as delusive would involve the rejection of Time, even though the other should be retained. Suppose we could show that one of them is involved in the notion of Time and that the other is involved in this one. Then, if we could show that the latter is delusive, we should have to reject the former and with it we should have to reject Time as delusive.

McTaggart does not clearly distinguish these alternatives, and it is far from easy to make out exactly what he is maintaining on these points. I propose, first, to state what I believe to be his doctrine, and then to give chapter and verse for my interpretation.

2-21. *Statement of McTaggart's Doctrine.* Suppose that we are given a series of terms related by a transitive asymmetrical relation R . Suppose further that between any two terms, x and y , of this series there is a third term, z , which is dissimilar to x in some respect beside occupying a different position in the series from x , and which is dissimilar from y in some respect beside occupying a different position in the series from y . Then (i) the series *cannot* be counted as a process of perpetual qualitative change *unless* R is the relation "earlier than" and the series is therefore a B -series. (ii) If the relation R is that of "earlier than", and the series is therefore a B -series, the series *can* be counted as a process of perpetual qualitative change. (iii) The series cannot be counted as a process of perpetual qualitative change unless *each term* of it changes in respect of a certain characteristic. (iv) The only characteristics in respect of which the individual terms can change are A -characteristics, i.e., degree of futurity, presentness, and degree of pastness. (v) Therefore, unless the terms of a series have A -characteristics and can change in respect of these, the series cannot be a process of qualitative change. And therefore, by step (ii), its generating relation R cannot be that of "earlier than" and the series cannot be a B -series.

2-22. *Justification of this Account of McTaggart's Doctrine.* I believe this to be an accurate account of McTaggart's doctrine on the present subject. I will now give my reasons for thinking that my interpretation is correct.

(i) In §309 of *The Nature of Existence* McTaggart says that it would be universally admitted that "time involves change". "There could be no time", he says, "if nothing changed". This statement, by itself, is highly ambiguous. In the first place, he might be referring to qualitative change, as when a poker gets hotter or a noise becomes louder; or he might be referring to change with respect to temporal characteristics,

i.e., to an event becoming present and then retreating into the more and more remote past. Secondly, even if he were referring to qualitative change, he might or might not mean that there must *always* be qualitative change going on somewhere if temporal characteristics are to apply within the universe.

It is quite plain, however, from his subsequent discussion, and particularly from a remark which he makes in §362, pp. 42 to 43, that he is referring to *qualitative* change, and that he holds that qualitative change must be *perpetual*, if temporal characteristics are to have any application. He says there: "The time-series consists of terms, joined by the relation of earlier and later, which terms are different in their *non-temporal* qualities. (If they were not different in their non-temporal qualities, there would be no change and therefore no time.)" I have italicised the word "non-temporal", which is essential for my purpose.

It is not very easy to state accurately what McTaggart means by the loose phrase "are different in their non-temporal qualities". We have to remember that the series is compact, so that there are no "next" terms in it. And we have to allow for the possibility that terms which are exactly alike in all other respects but their position in the series might recur. I think that McTaggart's meaning is accurately expressed by the second supposition which I make at the beginning of Sub-section 2.21, viz., that, between any two terms, x and y , of the series, there is always a third term z which is qualitatively dissimilar to both of them.

(ii) In §316 McTaggart contrasts the case of the history of a poker, which is hot at one moment and cold at a later moment, with the case of the meridian through Greenwich, which cuts one parallel of latitude in England and another more northerly one in Scotland. He there admits and asserts that we should say that a qualitative change takes place if and only if there are qualitatively dissimilar terms related by the relation of "earlier than". So far he is in complete agreement with Russell's analysis of qualitative change, which he is there engaged in criticising. His objection to Russell's analysis is that, unless the terms had A -characteristics and changed in

respect of them, the relation between them could not be that of "earlier than", and the series of qualitatively dissimilar terms could not constitute a process of qualitative change. This seems to justify me in ascribing to McTaggart propositions (i), (ii), and (iii) of the synopsis in Sub-section 2.21.

(iii) That there can be no process of qualitative change unless individual events change in respect of certain characteristics is asserted in §311 and reiterated in the criticism of Russell's theory in §§315 and 317. It is true that, in the latter sections, McTaggart talks of "facts", and not of "events", as changing. But McTaggart was always liable to use the word "fact" loosely, and it is certain that he often used it to mean "event". Moreover, the "facts" which are said to change are facts about the *A*-characteristics of events. This seems to justify me in ascribing to McTaggart proposition (iii) of the synopsis.

(iv) That the only characteristics in respect of which an event can change are its *A*-characteristics is asserted in §311 and reiterated (with "facts" substituted for "events") in §§315 and 317. This seems to justify me in ascribing to McTaggart proposition (iv) of the synopsis.

Before leaving the question of what McTaggart believed on this subject and passing to the question of why he believed it, there is one more point to be noticed. In Chap. XXXIII of *The Nature of Existence* McTaggart nowhere asserts, or claims to have proved, that the relation "earlier than" can be *defined* in terms of past, present, and future. But it is plain from §610 and the footnote to it that, when he had reached Chap. II, he thought he had shown that "earlier than" can be *defined* in terms of *A*-characteristics, whilst the converse does not hold. He says in §610 that "the term *P* is earlier than the term *Q* if it is ever past while *Q* is present, or present while *Q* is future". And, in the footnote, he says that, in spite of certain qualifications, "the statement in the text remains an adequate *definition* of 'earlier than'". (I have italicised the word "definition" in this quotation.) This appears to me to be a much more radical doctrine than any that is stated or argued for in Chap. XXXIII.

2-23. *McTaggart's Reasons for his Doctrine.* We will now state and criticise McTaggart's reasons for holding the doctrine which, as I have tried to show, he does hold on this subject.

(i) I think that everyone would agree that such a series as we have described at the beginning of Sub-section 2-21 would be counted as a process of perpetual qualitative change if and only if the relation *R*, which generates it, were the relation "earlier than". It is not so clear that a series of terms might not be related by the relation "earlier than" without answering to the condition that between any two of them there is a third which is qualitatively dissimilar to both. It might, perhaps, be granted that *some* of the terms must be qualitatively dissimilar if the series is to be a *B*-series, and therefore that there would have to be qualitative change at *some* moments. But is it at all obvious that complete qualitative *similarity* of all the terms between a certain pair, *x* and *y*, would be incompatible with their being ordered by the relation of "earlier than"? In fact, granted that there could not be succession without *occasional* qualitative change, is it obvious that there could not be succession without *perpetual* qualitative change? This is certainly not evident to me; but I do not think that the doubt affects the rest of McTaggart's argument.

(ii) The essential point which McTaggart has to prove is that a series of qualitatively dissimilar terms could not be counted as a process of qualitative change unless *each term* changed in respect of certain characteristics. If this is established anywhere, it is established in §§310 to 312 inclusive. The argument may be summarised as follows. Suppose, if possible, that there could be a *B*-series of terms which had no *A*-characteristics, and therefore of terms which could not change in respect of *A*-characteristics. Then this series could not constitute a process of qualitative change. But, unless there be qualitative change, no temporal characteristics have any application. Now the relation "earlier than", which relates the terms of a *B*-series, is a temporal relation. Therefore the supposition that there could be a *B*-series of terms

which had no *A*-characteristics must be rejected as impossible.

McTaggart professes to show that a *B*-series of terms which had no *A*-characteristics could not constitute a process of qualitative change in §§310 and 311. His argument is as follows: (a) A process of qualitative change could not consist in the annihilation of one event in such a series and the generation of another event in place of it. For any term that is *ever* earlier than another *always* precedes that other, and always precedes it by exactly the same amount. (b) A process of qualitative change cannot consist in one event "merging into" another, so that the two have a slice in common. For then the change would involve the annihilation of that phase of the first event which precedes the common slice and the subsequent generation of that phase of the second event which follows the common slice. And such generation and annihilation of terms in a *B*-series is impossible for the reasons already given. (c) Having rejected these two alternative analyses of qualitative change in §310, McTaggart assumes in §311 that the only alternative left is that each term in a *B*-series changes in respect of certain characteristics. Since the terms are events, the only characteristics in respect of which they can change are temporal ones. They can only become less and less remotely future, then present, and then more and more remotely past. That is, they must have *A*-characteristics, and they must change in respect of these.

Plainly there are two questions to be raised about this argument. (i) Are the alternative analyses of qualitative change which McTaggart here proposes exhaustive? (ii) Is he justified in rejecting the first two of the three alternatives which he considers?

(i) It will be noticed that, in all the alternatives which McTaggart here considers, he confines his attention to *events* and says nothing about *things*. The alternatives which he considers are (a) that *events* are generated and annihilated *en bloc*, (b) that *events* are continually "losing their tails and growing new heads", and (c) that *events* change in respect of

A-characteristics. Now *prima facie* it is *things*, and not events, which are the subjects of qualitative change. Oddly enough, McTaggart never mentions this apparent alternative until he begins to criticise Russell's analysis of qualitative change in §§314 to 316 inclusive. It will be well to consider what he says about this at once.

Perhaps the most plausible way of stating Russell's theory is the following. Events are neither generated nor annihilated, nor do they change in respect of any of their characteristics. There are certain series of successive events, such that the members of any one such series are intimately interconnected by certain spatial, causal, and other relations, which do not interconnect members of any two such series. Each such series is counted as the history of a different thing. Now successive members of one such series may differ in respect of a certain quality; e.g., one term may have the determinable quality *Q* in the determinate form q_1 and a later term may have *Q* in the form q_2 . The statement "The thing *T* changes from q_1 to q_2 " is completely analysable into a statement of the following kind. "There is a certain series of successive events so interrelated that it counts as the history of a certain thing *T*; e_1 and e_2 are two successive adjoined phases in this series; and e_1 has *Q* in the form q_1 whilst e_2 has *Q* in the form q_2 ." Now what objection has McTaggart to this alternative, which he failed to consider in §§310 and 311? He has two objections. The first is, I think, irrelevant; and the second is, I think, an *ignoratio elenchi*. We will now consider them in turn.

(a) In §315 his objection amounts to the following. It is *always* a fact about this series that it contains a term which has q_1 and a term which has q_2 and that the former immediately precedes the latter. Hence this fact cannot be what is referred to when we say that *T* has changed in respect of *Q* from q_1 to q_2 .

Now this seems to me to be irrelevant. Certainly, on this view of qualitative change, no fact and no event changes. It is alleged, instead, by the supporters of this view, that the fact of change consists in a conjunction of facts which

neither change nor are about change. To this McTaggart merely makes the counter-assertion that there can be no change unless certain facts about events change, i.e., unless events of the first-order are subjects of events of the second-order. And the only ground which he has given for this is the argument in §§310 and 311, where he *ignored* the present alternative and *assumed* that he had exhausted all the possible alternative views about qualitative change.

(b) In §316 he takes a different line. He there admits that such a series *would* constitute a process of qualitative change, provided that the terms in it *could* be related by the relation "earlier than". But he claims to have shown that, unless the terms had *A*-characteristics and changed in respect of these, they could not be related by this relation, and therefore the series could not be a process of qualitative change.

But how has he shown this? He has done so, if at all, only by using an argument which *ignores* the present alternative and *assumes* that the three alternatives enumerated in §§310 and 311 are exhaustive. Thus he rejects the present alternative only by appealing to an argument which tacitly assumes that it has already been rejected.

(ii) We can now pass to the second question. Was McTaggart justified in rejecting the alternatives which he mentioned in §310? The basis of his rejection is the principle that, if *X* ever precedes *Y* by a certain amount, then it *always* precedes *Y* by precisely that amount. This principle is supposed to be incompatible with the view that events are generated and annihilated. Now I think that this principle, though it is obviously true in some sense or other, needs to be rather carefully considered.

Let us take as examples the Battle of Hastings and the Battle of Waterloo. Before either battle had happened it would have been true to say "There will be a battle at Hastings and there will be a battle at Waterloo 749 years later", though perhaps no one would have been in a position to say it. During the Battle of Hastings it would have been true to say "There is a battle going on at Hastings and there will be a battle at Waterloo 749 years later." At any inter-

mediate date it would have been true to say "There was a battle at Hastings and there will be a battle at Waterloo 749 years later." During the Battle of Waterloo it would have been true to say "There is a battle going on at Waterloo and there was a battle at Hastings 749 years earlier." At any moment after the Battle of Waterloo it is true to say "There was a battle at Hastings and there was a battle at Waterloo 749 years later." These expressions, all of which involve *temporal copulas*, are the natural and the accurate ways of recording facts about relations of precedence. When both events are known or confidently believed to have happened it is usual and convenient to employ such a phrase as "The Battle of Hastings preceded the Battle of Waterloo by 749 years." When it is confidently expected that both events will happen it is usual and convenient to employ such a phrase as "The degree-ceremony *will be* followed after an interval of half-an-hour by a luncheon in Trinity."

It will be noticed that, in every case, either a temporal copula or a verb with tense is used. No one but a philosopher doing philosophy would say "The Battle of Hastings precedes the Battle of Waterloo by 749 years." Such phraseology would suggest that the two events are two particulars which (a) somehow *co-exist* either timelessly or simultaneously, and yet (b) stand timelessly or sempiternally in a certain *temporal* relation of precedence. This must be nonsense, and it is most undesirable to use phrases which inevitably suggest such nonsense. I cannot help suspecting that there is some muddle of this kind at the back of McTaggart's mind when he says that events cannot be annihilated or generated because this would be incompatible with the fact that they *always* stand in the determinate temporal relation in which they do stand to each other. I suspect that his thought, if made explicit, would run somewhat as follows. "In order to stand in any relation to each other at any moment two related terms must, in some sense, *co-exist*. Therefore, if a certain pair of terms *always* stand in a certain relation to each other, they must *always* co-exist in that sense, whatever it may be. But, if two terms always co-exist, *each* term must, in some sense, *always exist*."

And, if each term always exists, neither term can ever be generated or annihilated."

Now I think that this argument owes any plausibility that it may have to the following confusion. One begins by thinking of relations between timeless terms, like numbers, or of spatial relations between bodies. Numbers "co-exist" timelessly, and spatial relations hold between bodies only while the bodies co-exist. If the fountain in the Great Court of Trinity were "annihilated", in the perfectly intelligible sense in which it would be if it were blown up by a bomb, it would no longer be between the Great Gate and the Hall. If a statue of Henry VIII were "generated" in its place, in the perfectly intelligible sense in which it would be if the College had one constructed there, it would begin to be between the Great Gate and the Hall. I suspect that one tends to carry over these notions and principles from timeless terms and continuants, where they are intelligible and true, to the perfectly unique case of events, where they are meaningless. The only sense in which an event e is "annihilated" is that there was and no longer is an event answering to the description of e . The only sense in which an event e is "generated" is that there was not and now is an event answering to the description of e . In this sense events *are* "generated" and "annihilated", and this is compatible with any two of them "always" standing to each other in any temporal relation in which they "ever" stand.

To sum up. It seems to me that McTaggart's arguments to prove that a B -series of terms which had no A -characteristics would not constitute a process of qualitative change, and therefore would not be a B -series, are thoroughly confused and inconclusive. It does not follow that his conclusion is false, or that it could not be proved in some other way. We will therefore re-consider the question independently.

2-24. *Restatement of the Position.* I cannot help suspecting, from the passages which I quoted from §610 and the footnote to it, that McTaggart's mind probably moved in the following way in thinking of the connexion between A -characteristics and B -characteristics. I suspect that he thought that the

B-relation could be *defined* in terms of the *A*-characteristics, and that the latter could not be defined in terms of the former; and he then constructed the very unsatisfactory arguments about qualitative change to persuade other people that the *B*-relation could not hold except between terms which had changing *A*-characteristics.

I think that the view which underlies §610 and its footnote might be put most clearly and fairly as follows. There is a set of terms such that at any moment every *A*-characteristic belongs to one or other of them, each of them has one and only one *A*-characteristic, and no two of them have the same *A*-characteristic. Each of these terms changes perpetually in respect of its *A*-characteristic in the direction from greater to less futurity, through presentness, to greater and greater pastness. These changes are so adjusted that the *algebraical difference* between the *A*-characteristics of any two terms remains constant and independent of the *absolute values* of their *A*-characteristics. To say that *X* is "so much earlier than" *Y* at any moment *means* simply and solely that the algebraic difference between the *A*-characteristics of *X* and of *Y* is so-and-so at that moment. Since this algebraic difference is constant, *X* will be exactly as much earlier than *Y* at every moment as it is at any moment. Since the absolute values of the *A*-characteristics of *X* and *Y* are constantly changing, *X* and *Y* will be constantly retreating in the direction of greater and greater pastness. Thus every term in the series runs through the *A*-series of characteristics at the same rate and in the same direction, and so each term changes in respect of its *A*-characteristics. Yet every different term in the series at any moment has a different *A*-characteristic, and the algebraic difference between the *A*-characteristics of any given pair of terms remains constant at all moments. Thus the terms form a *B*-series, and their *B*-relations are the same at every moment. We can accept Russell's analysis of qualitative change, so far as it goes; and McTaggart seems to do this in the second paragraph of §316 and in the passage from §362 (pp. 42-43) which I quoted earlier. But we must add to it that each of the events in the series

must be changing in respect of its *A*-characteristics in order that the series may be a *B*-series and count as a process of qualitative change.

The theory which I have just stated seems to be much the best case that can be put up for McTaggart. What are we to say about it? (i) I have tried to show in Sub-section 1.22 of the present chapter that it is hopeless to treat temporal becoming as a particular case of qualitative change; and this, in effect, is what the present theory tries to do. We must remember, however, that McTaggart is going to reject ostensible temporality as a delusive characteristic. Therefore he might welcome the difficulties which I indicated in that Sub-section. He might say: "I agree that, if you try to treat temporal becoming as a species of qualitative change, you are landed in all the absurdities which you have mentioned. On the other hand, if you want to think of it at all, this is the only way in which to think of it. So we must conclude that ostensible temporality will not bear thinking about, and that it is a delusive characteristic."

(ii) It might be objected against this theory that a person can directlyprehend two terms, e.g., two ticks of a clock, which fall into the same Specious Present, as *successive*. Yet he prehends both of them as *present*. Therefore, when he says that one is earlier than the other, he cannot *mean* that the former is *past* when the latter is present. I think that this objection depends on the confusion between presentness and presentedness, which is embalmed in the phrase "specious present" and has been indicated in Sub-section 1.3 of this chapter. The two ticks of the clock in my example are *co-presented*; i.e., when the latter is being prehended the earlier is still being prehended though with diminished degree of presentedness. But a moment's reflexion on the fact that they are prehended as *successive* shows that they cannot be *co-present*.

(iii) Even if we reject the view that "*X* is earlier than *Y*" means that there is a difference in the *A*-characteristics of *X* and of *Y* and that this difference is positive, there remains another alternative which would suffice for McTaggart's

purpose. It might be suggested that the relation "earlier than" can hold only between terms which have *A*-characteristics; just as harmonic relations can hold only between terms which have pitch. And it might be suggested that the degree of the *B*-relation between two terms depends on the difference between the determinate values of their *A*-characteristics; just as the harmonic relations between two notes depend on the difference between the absolute pitches of the two. In fact, to use an expression of Meinong's, we might be able to see that *B*-relations are "founded upon" differences in the *A*-characteristics of the related terms.

This view seems to me to be a highly plausible one, and I know of no positive argument against it. If it were accepted, we should have to grant to McTaggart that there could not be *B*-relations between terms unless the terms had *A*-characteristics, even if we refused to admit that *B*-relations are definable in terms of *A*-characteristics and their differences. I should consider that this theory holds the field unless it can be shown that sentences which contain the words "past", "present", or "future", or their equivalents, can be translated without loss of meaning into sentences which do not contain these words or equivalents of them, but do contain the phrase "earlier than" or some equivalent of it. Now Russell and certain other philosophers have claimed that this can be done. McTaggart discusses Russell's attempt in §§ 313 to 318 inclusive.

A simple way of stating the theory is as follows. Take the sentence "It is now raining." A number of utterances may occur at different times, which are all alike enough in the relevant respects to count as utterances of this sentence. Now any one who utters this sentence seriously on any occasion means to express his belief that an occurrence of rain falling in his neighbourhood is simultaneous with this utterance of his. And anyone who hears and understands any such utterance will take it to mean that an occurrence of rain falling in the speaker's neighbourhood is simultaneous with this utterance. Thus any utterance *U* of the type-sentence (to use Ramsey's phrase) "It is raining now" means "An occurrence

of rain in the neighbourhood of the speaker who utters U is simultaneous with this utterance." We may abbreviate this into "An occurrence of rain is spatio-temporally contiguous with the utterance U ." Now both speaker and hearer actually *prehend* the utterance U , since one makes it and both hear it. So, finally, when a speaker utters the type-sentence "It is raining now", what he means is "An occurrence of rain is spatio-temporally contiguous with *this* utterance of *mine*." And what the hearer understands could be expressed by the hearer saying "An occurrence of rain is spatio-temporally contiguous with *that* utterance of *his*." Different utterances of the same type-sentence necessarily have different meanings. One will mean "An occurrence of rain is spatio-temporally contiguous with U_1 ." Another will mean "An occurrence of rain is spatio-temporally contiguous with U_2 ." If U_1 and U_2 be successive, it may well be that one expresses a true proposition and the other a false proposition, though both are utterances of the same type-sentence "It is raining now."

The theory may be summed up as follows. Any utterance of a type-sentence, which is of a certain grammatical form and contains the type-word "now" or "present" or some equivalent, is understood by speaker and hearers to mean that an event of a certain kind is *simultaneous* with *this* utterance. Any utterance of a type-sentence, which is of a certain grammatical form and contains the type-word "past" or some equivalent, is understood by speaker and hearers to mean that an event of a certain kind is *earlier than this* utterance. And the same holds, *mutatis mutandis*, for any utterance of a type-sentence which is of a certain grammatical form and contains the type-word "future" or some equivalent. Unless there were people who uttered type-sentences of these kinds nothing would be past, present, or future; though events would still be simultaneous or successive. If this be so, A -characteristics have been completely analysed in terms of B -relations.

Can this theory be accepted? (i) In the form in which I have stated it I do not think that it can possibly be the right analysis of what a *speaker* means when he utters such a type-

sentence as "It is raining now", even if it were the right analysis of what his *hearers* understand on such an occasion. For this would involve that the speaker is using the utterance to express a judgment which he is making about the utterance itself. I am very doubtful whether this is possible at all; and I am fairly certain that, when I make such an utterance, I am not making a judgment about the utterance which I am making. This difficulty does not arise about the hearers.

(ii) The objection just mentioned could be removed by a slight modification of the theory. We might say that what the speaker means by his utterance is that an occurrence of rain is simultaneous with *this*, where *this* is some particular, other than the utterance itself, which he prehends simultaneously with making the utterance. The particular in question might be one of his own experiences or some sensum which he is sensing. His hearers will almost certainly not prehend this particular, and therefore what they understand by the utterance cannot be exactly the same as what the speaker means to express by it. As regards the hearers, we may suppose that each interprets the utterance to mean that an occurrence of rain in the speaker's neighbourhood is roughly simultaneous with certain auditory sensa which that hearer is sensing, viz., those which are manifestations to *him* of this utterance of the speaker. Let us take the theory in this amended form, and consider whether it is adequate.

(iii) The first comment to be made is this. The theory professes to give an analysis of those temporal facts which are expressed by sentences containing temporal copulas, like "is now", "was", or "will be", or temporal adjectives, like "past", "present", or "future". When we look at the proposed analysis we find that it substitutes sentences of the form "Such and such an event is simultaneous with, or is earlier than, or is later than, *this*"; where "this" is used as a logical proper name for some particular which the speaker or the hearer is prehending when he makes or hears the utterance. Now what kind of copula is the "is" in these substituted sentences? Is it a timeless copula, like the "is" in

"3 is the immediate successor of 2" or in "13 is a prime number"? Or is it the temporal copula "is now"? Or is it some third kind of copula which logicians and metaphysicians have not clearly recognised and distinguished?

If it is the timeless copula, the theory has *prima facie* been successful. If it is the temporal copula "is now", the theory has certainly failed. If it is supposed to be some third kind of copula, we must await further information about it from supporters of the theory.

Now, as I pointed out in Sub-section 2-23 of this chapter, we do not say "The Battle of Hastings precedes (or *is* followed by) the Battle of Waterloo." We say "The Battle of Hastings preceded (or *was* followed by) the Battle of Waterloo." Again, we do not say, on getting up in the morning, "My lunch precedes (or *is* followed by) a meeting of the Faculty Board of Moral Science." We say "My lunch *will* precede (or *will* be followed by) a meeting of the Faculty Board of Moral Science." Thus it seems *prima facie* that the copula in propositions which assert temporal relations between events is not the timeless copula which occurs in propositions about the qualities and relations of abstract objects like numbers. The copula seems *prima facie* to be the temporal copula "is now", "was", or "will be", as the case may be. According to the theory which we are discussing, an utterance of the type-sentence "It will rain" means "An occurrence of rain in this neighbourhood is later than *this*", where "this" is used by the speaker as a proper name for a certain particular which he prehends when he makes the utterance. But no one except a philosopher doing philosophy ever does talk in this way. What we say is "An occurrence of rain in this neighbourhood *will* follow (or *will* happen later than) *this*." So *prima facie* the proposed analysis has failed to analyse away the temporal copula "will". Similar remarks apply, *mutatis mutandis*, to the proposed analysis of statements of the form "My breakfast is past" or "I have had my breakfast." We are told that an utterance of such a type-sentence means "Eating my breakfast precedes *this*." But no one ever does talk in this way in real life. Instead we say "Eating my

breakfast preceded this." And so, *prima facie*, the temporal copula has not been analysed away.

Of course it may be answered that this objection depends simply on defects in the language that we speak. It may be so. But I am more inclined to think that the obvious artificiality and awkwardness of the sentences which express temporal facts, according to this analysis of them, are a sign that we are trying and failing to force temporal facts into the mould of non-temporal facts about abstract objects such as numbers. The theory seems to presuppose that all events, past, present, and future, in some sense "co-exist", and stand to each other timelessly or sempiternally in determinate relations of temporal precedence. But how are we to think of this "co-existence" of events? It seems to me that the events and their temporal relations are thought of either by analogy with *timeless* abstract objects, such as the integers in their order of magnitude, or by analogy with *simultaneous persistent* particulars, like points on a line in spatial order from left to right. Neither of these analogies will bear thinking out; yet I suspect that the theory is made to seem intelligible and adequate to its supporters by the fact that these irrelevant analogies are always hovering about at the back of their minds.

(iv) It remains to make one more comment on the theory under discussion. It seems to me that the theory leaves altogether out of account the transitory aspect of Time. According to it, "past", "present", and "future", as used by a person at any moment, always denominate relational properties, in which the relation is "earlier than", "simultaneous with", or "later than", respectively, and the relatum is some particular which the speaker is prehending or some experience which he is having at that moment. Supposing this to be true, the transitory aspect of Time consists in the fact that the relatum is never the same on two different occasions on which these words are used.

Consider, e.g., that series of successive experiences which constitutes my mental history from the cradle to the grave. On the theory which we are discussing, there is no question

of events "becoming" or "passing away". In some sense of "is", there "is" timelessly or sempiternally all that there ever has been or will be of the series. The qualitative changes that take place in the course of my experience are supposed to be completely analysable into the fact that different terms of this series differ in quality, as different segments of a variously coloured string differ in colour. But this leaves out the fact that at any moment a certain short segment of the series is marked out from all the rest by the quality of presentedness; that at any two different moments the short segments thus marked out are different segments, though they may partially overlap if the two moments are near enough together; and that the relatum at any moment is, or is contained in, that short segment which has presentedness at that moment. Thus change has to be postulated in a sense not contemplated by the theory, viz., the steady movement of the quality of presentedness along the series in the direction from earlier to later. If we try to deal with this kind of change in the way in which the theory deals with the qualitative changes that take place in the course of my experience, we shall be committed to making each term in the original series a term in a second series in a second time-dimension. We shall have events of the second order, viz., the becoming presented of events of the first order. In fact we shall be landed in the endless series of time-dimensions and orders of events which I mentioned in Sub-section 1.22 of this chapter. And this seems to me to be a most serious difficulty.

As at present advised, then, I am inclined to agree with McTaggart that *A*-characteristics cannot be analysed completely in terms of *B*-relations, and that the notions of Time and Qualitative Change involve *A*-characteristics as well as *B*-characteristics. I am well aware how easy it is to talk nonsense about Time, and to mistake for arguments what are in fact merely verbal tangles. I think it is quite possible that I may have done this. I have altered my mind too often on this most perplexing subject to feel any confidence that my present opinions are either correct or well-founded. But I give them for what they are worth.

3. McTaggart's Arguments against the Reality of Time.

We come at last to McTaggart's destructive arguments. There are two of these. There is a subsidiary argument contained in §§326 to 328 of *The Nature of Existence*, which I do not think that McTaggart regards as conclusive. The main argument is contained in §§329 to 333 inclusive. We will begin with it.

3.1. *The Main Argument.* We take as an established premise that any series which could count as a temporal series would have to consist of terms which have *A*-characteristics and which individually change in respect of their *A*-characteristics. McTaggart tries to prove that there is a contradiction involved in this condition, and therefore that nothing could be a temporal series. If he is right, then, the characteristic of being a *B*-series, i.e., a series in which the terms are events and the relation is that of "earlier than", is a delusive characteristic.

The essence of the argument is as follows: (i) The various determinate *A*-characteristics are incompatible with each other, in the usual way in which different determinates under the same determinable are so. McTaggart confines his statement to past, present, and future. But, of course, if it is true at all, it is equally true of any two degrees of pastness or of futurity.

(ii) Every event has all the *A*-characteristics; for every event has all degrees of futurity, has presentness, and has all degrees of pastness. The only possible exceptions would be the last event, if there were one, and the first event, if there were one. But, even so, the last event would have presentness and all degrees of futurity, though it would not have pastness. And the first event would have presentness and all degrees of pastness, though it would not have futurity. Thus every event has a plurality of determinate *A*-characteristics, whilst no two *A*-characteristics are compatible with each other.

(iii) McTaggart admits that, at first sight, this seems to lead to no difficulty. After all, no event has two different

A-characteristics at any one moment; though each event has a different *A*-characteristic at each different moment.

(iv) McTaggart claims to show, however, that this attempted answer is useless, because it leads either to a contradiction or to a vicious infinite regress. His argument is as follows.

Suppose we try to avoid the contradiction of a term *M* being past, present, and future by saying that *M* is now present, will be past, and has been future; or by saying that *M* is now future, will be present, and will be past; or by saying that *M* is now past, has been present, and has been future. We must then raise the question of what we mean by these temporal copulas. According to McTaggart, there is only one possible analysis. To say that *S* has been *P* means "There is a moment *t*, such that *S* has *P* at *t* and *t* is past." To say that *S* is now *P* means "There is a moment *t*, such that *S* has *P* and *t* is present." To say that *S* will be *P* means "There is a moment *t*, such that *S* has *P* at *t* and *t* is future."

Now substitute *M* for *S*, and substitute the *A*-characteristics for *P*. We get the following results. "*M* is now present" means "There is a moment *t*, such that *M* has presentness at *t* and *t* is present." Again, "*M* will be past" means "There is a moment *t*, such that *M* has pastness at *t* and *t* is future." Lastly, "*M* has been future" means "There is a moment *t*, such that *M* has futurity at *t* and *t* is past."

The next stage of the argument will be found in the last paragraph of §331. It is very difficult to follow, as stated by McTaggart; but I have no doubt as to what is the essential point of it. I shall first quote McTaggart's argument in his own words, and shall then restate in my own way what is substantially the same argument. McTaggart's statement runs as follows: "...every moment, like every event, is both past, present, and future...If *M* is present, there is no moment of past time at which it is past. But the moments of future time, in which it is past, are equally moments of past time, in which it cannot be past. Again, that *M* is future and will be present and past means that *M* is future at a moment of present time, and present and past at different moments of

future time. In that case it cannot be present or past at any moments of past time. But all the moments of future time, in which *M* will be present or past, are equally moments of past time."

I will now try to put the essential points of this very obscure argument clearly. The question is whether the three propositions "*M* is now present, *M* has been future, and *M* will be past" are mutually compatible. McTaggart wants to show that they are not. (a) Consider the proposition "*M* will be past." According to McTaggart, this means "There is a moment *t*, such that *M* has pastness at *t* and *t* is future." But, according to him, any moment that is future is also *present*. Therefore it follows that there is a moment *t*, such that *M* has pastness at *t* and *t* is *present*. But this is equivalent to the proposition "*M* is now past." This is incompatible with the proposition "*M* is now present." Thus "*M* will be past" entails "*M* is now past", and the latter is inconsistent with "*M* is now present." Therefore "*M* will be past" is inconsistent with "*M* is now present."

(b) Now consider the proposition "*M* has been future." According to McTaggart, this means "There is a moment *t*, such that *M* has futurity at *t* and *t* is past." But, according to him, any moment that is past is also *present*. Therefore it follows that there is a moment *t*, such that *M* has futurity at *t* and *t* is *present*. But this is equivalent to the proposition "*M* is now future." This is incompatible with the proposition "*M* is now present." Thus "*M* has been future" entails "*M* is now future", and the latter is inconsistent with "*M* is now present." Therefore "*M* has been future" is inconsistent with "*M* is now present."

(c) If the argument in paragraphs (a) and (b) were valid, it would have proved that both the propositions "*M* will be past" and "*M* has been future" are inconsistent with the proposition "*M* is now present." It remains to show that these two propositions are inconsistent with *each other*. This is easily done. From the argument in paragraph (a) we conclude that "*M* will be past" entails "*M* is now past." From the argument in paragraph (b) we conclude that "*M* has been

future" entails "*M* is now future." But the two propositions "*M* is now past" and "*M* is now future" are incompatible with each other. Therefore the two propositions "*M* will be past" and "*M* has been future" are incompatible with each other. Thus, if the argument is valid, it would prove that *each* of the three propositions "*M* is now present", "*M* has been future", and "*M* will be past" is incompatible with the other two. I believe this to be a fair and clear statement of the line of argument which McTaggart had in mind in the last paragraph of §331.

If we had started, instead, with the three propositions "*M* is now past, *M* has been present, and *M* has been future", or "*M* is now future, *M* will be present, and *M* will later on be past", a similar argument would have led to a similar result. So McTaggart claims to have shown that the original contradiction of *M* being past, present, and future breaks out again in the amended statement that *M* is now present, has been future, and will be past; and in the amended statement that *M* is now past and has been present and future; and in the amended statement that *M* is now future and will be present and past.

(v) Of course there is *prima facie* a perfectly simple answer to this alleged contradiction, which McTaggart mentions in §332. Instead of admitting in paragraph (a) above that the future moment at which *M* has pastness is also present, we ought only to have admitted that it *will be* present. And, instead of admitting in paragraph (b) above that the past moment at which *M* has futurity is also present, we ought only to have admitted that it *has been* present. The argument would then have broken down at the first move.

McTaggart rejects this answer on the following grounds. According to him, we shall have to analyse the statement that a certain *moment t* is now present, has been future, and will be past, in a similar way to that in which we analysed the corresponding statements about the *event M*. To say that *t will be* present, e.g., must mean that there is a moment *t'*, such that *t* has presentness at *t'* and *t'* is future. To say that *t has been* present must mean that there is a moment *t'*, such that *t* has

presentness at t' and t' is past. Thus the same contradiction will arise at the second stage about *moments* as arose at the first stage about *events*. Any attempt to remove it in the same way will merely lead to a third stage at which the same contradiction will break out. We start on an infinite regress; which is vicious, because each step is needed in order to remove a contradiction in the previous stage, and at each stage the same contradiction breaks out again.

This is the main argument by which McTaggart persuaded himself that nothing can have *A*-characteristics. If nothing can have them, nothing can change in respect of them. If nothing can change in respect of *A*-characteristics, there can be no processes of qualitative change. And, if there can be no processes of qualitative change, no series can be a *B*-series. And so neither *A*-characteristics, nor *B*-relations, nor qualitative change or persistence, can apply to anything. All these ostensible characteristics are delusive.

3-11. *Criticism of the Main Argument.* We must now consider whether this argument of McTaggart's is valid. I should suppose that every reader must have felt about it as any healthy-minded person feels about the Ontological Argument for the existence of God, viz., that it is obviously wrong somewhere, but that it may not be easy to say precisely what is wrong with it.

(i) I cannot myself see that there is any contradiction to be avoided. When it is said that pastness, presentness, and futurity are incompatible predicates, this is true only in the sense that no one term could have two of them *simultaneously* or *timelessly*. Now no term ever appears to have any of them timelessly, and no term ever appears to have any two of them simultaneously. What appears to be the case is that certain terms have them *successively*. Thus there is nothing in the temporal appearances to suggest that there is a contradiction to be avoided.

(ii) What are we to say, then, about McTaggart's alleged vicious infinite regress? In the first place we must say that, since there is no contradiction to be avoided, there is no need to start on any regress in order to avoid a contradiction.

Secondly, we may well ask why McTaggart should assume that, e.g., "*M* is now present" *must* be analysed into "There is a moment *t*, such that *M* has presentness at *t* and *t* is present." Similarly, we may ask why he should assume that, e.g., "The moment *t* has been future" *must* be analysed into "There is a moment *t'*, such that *t* has futurity at *t'* and *t'* is past."

(a) In the first place, we note that McTaggart has suddenly introduced the notion of *moments*, in addition to that of *events*. No justification whatever has been given for this. It would seem to imply that the temporal copulas "is now", "has been", and "will be" presuppose some form of the Absolute Theory of Time. This is surely not obvious.

(b) The real motive of this analysis, and the real cause of the subsequent infinite regress, seems to me to be a certain assumption which McTaggart tacitly makes. He assumes that what is meant by a sentence with a *temporal copula* must be completely (and more accurately) expressible by a sentence or combination of sentences in which there is no temporal copula, but only *temporal predicates* and non-temporal copulas. And the regress arises because there remains at every stage a copula which, if taken as non-temporal, involves the *non-temporal* possession by a term of certain temporal predicates which could belong to it only *successively*.

Take, e.g., the general analysis of "*S* is now *P*" into "There is a moment *t*, such that *S* has *P* at *t* and *t* is present." The only motive for making this analysis is that it seems at first sight to have got rid of the temporal copula "is now". The predicate "having *P* at *t*" may be said to belong to *S* timelessly or sempiternally if it belongs to *S* at all. And we are tempted to think that the "is" in "*t* is present" is a timeless copula too. Now the source of McTaggart's regress is that, if you take the "is" in "*t* is present" to be timeless, you will have to admit that *t* is also past and future in the same timeless sense of "is". Now this is impossible, for it is obvious that *t* can have these predicates only in succession. If, to avoid this, you say that the "is" in "*t* is present" means "is now", you have not got rid of temporal copulas. Therefore, if

you are committed at all costs to getting rid of them, you will not be able to rest at this stage. At every stage of the analysis you will have a copula which, if taken to be *non-temporal*, leads to a contradiction, and, if taken to be *temporal*, needs to be analysed further in terms of temporal predicates and non-temporal copulas.

Now it seems to me that the proper interpretation of the regress is that it disproves the assumption that temporal copulas can be replaced by temporal predicates and non-temporal copulas. Since there is nothing necessary or self-evident about this assumption, the regress raises no objection to the *prima facie* appearance that events become and pass away and that they stand to each other in relations of temporal sequence and simultaneity.

(iii) It may be worth while to go into a little more detail about the question of temporal copulas and temporal predicates before leaving this topic. Let us take the sentences "It will rain", "It is now raining", and "It has rained." The utmost that can be done with the first is to analyse it into "There is (in some non-temporal sense of 'is') an event characterised non-temporally by raininess, and it is now future." The corresponding analyses of the second and third would be got by substituting "it is now present" and "it is now past", respectively, for "it is now future" in the analysis of the first. Even if this kind of analysis be accepted as correct, we have not got rid of the temporal copula "is now".

Another type of analysis would be to make "It will rain" equivalent to "There is (in some non-temporal sense of 'is') an event characterised non-temporally by raininess, and it will be present." The corresponding analyses of the second and third would be got by substituting "it is now present" and "it has been present", respectively, for "it will be present" in the analysis of the first. Here we get rid of two out of the three *A*-characteristics, but have to keep all three temporal copulas. In the previous kind of analysis we got rid of two out of the three temporal copulas, but had to keep all three *A*-characteristics. So, on neither kind of analysis, can we get rid of *all* temporal copulas; and, on both kinds of

analysis, we have to introduce at least one temporal predicate in addition to temporal copulas. Now the original sentences "It will rain", "It is now raining", and "It has rained" express the facts in the most natural and simple way without introducing temporal predicates in addition to temporal copulas. So both kinds of analysis seem to be worthless. They complicate instead of simplifying; they make nothing intelligible which was not intelligible before; and they suggest false analogies with non-temporal propositions.

Quite apart from the fact that such "analyses" serve no useful purpose, it seems to me that they fail to express what we have in mind when we use such sentences as "It has rained" or "It will rain." When I utter the sentence "It has rained", I do *not* mean that, in some mysterious non-temporal sense of "is", there *is* a rainy event, which momentarily possessed the quality of presentness and has now lost it and acquired instead some determinate form of the quality of pastness. What I mean is that raininess has been, and no longer is being, manifested in my neighbourhood. When I utter the sentence "It will rain", I do *not* mean that, in some mysterious non-temporal sense of "is", there *is* a rainy event, which now possesses some determinate form of the quality of futurity and will in course of time lose futurity and acquire instead the quality of presentness. What I mean is that raininess will be, but is not now being, manifested in my neighbourhood.

The fact is that what are called "statements about past events" are statements to the effect that certain characteristics, which constitute descriptions of possible events, have been and no longer are being manifested. What are called "statements about future events" are statements to the effect that certain characteristics, which constitute descriptions of possible events, will be but are not yet being manifested.

To sum up. I believe that McTaggart's main argument against the reality of Time is a philosophical "howler" of the same kind as the Ontological Argument for the existence of God. The fallacy of the Ontological Argument consists in treating being or existence as if it were a predicate like good-

ness, and in treating instantial propositions as if they were characterising propositions. The fallacy in McTaggart's argument consists in treating absolute becoming as if it were a species of qualitative change, and in trying to replace temporal copulas by non-temporal copulas and temporal adjectives. Both these "howlers", like the Fall of Adam, have been over-ruled to good ends. In each case one can see that there is something radically wrong with the argument; and one's desire to put one's finger on the precise point of weakness stimulates one to clear up linguistic confusions which would otherwise have remained unnoticed and unresolved. I suspect that plenty of other philosophers have made the same mistake as St Anselm and the same mistake as McTaggart. But, since they did not draw such startling consequences from their confusions as these eminent men did, these errors have been allowed to rest in decent obscurity.

3.2. *The Subsidiary Argument.* McTaggart's subsidiary argument to prove that *A*-characteristics are delusive is to be found in §§ 326 to 328, inclusive, of *The Nature of Existence*. In § 326 he starts by raising the question whether *A*-characteristics are qualities or relations. He says that it seems quite clear to him that they are not qualities but are relations. It seems to me, however, from what he says in the next few sections, that what he really means is that *A*-characteristics are *relational properties* as opposed to original qualities.

Now the temporal relations of events to each other are *B*-relations, and these cannot change in any way whatever. If there be moments, as distinct from events, the same will be true of their temporal relations to each other. And the same would be true of the relation of "occupation", which would relate an event-particle to the moment at which it happens if there were both moments and events. Now, if *A*-characteristics are relational properties, they must involve *temporal* relations of events or moments to *something or other*. And, since events or moments change in respect of their *A*-characteristics, the relata of these temporal relations cannot be other *events* or other *moments*. These relata will have to be terms which are not members of a *B*-series at all.

McTaggart then objects that it is difficult to think of any terms that could fulfil these conditions. We have to find a term X , which is not an event or a moment, such that to say that an event e is "past" or "present" or "future" is to say that e has to X a certain temporal relation R_1 or a certain temporal relation R_2 or a certain temporal relation R_3 , as the case may be. And, since an event changes in respect of pastness, presentness, and futurity, we must be able to say that e sometimes has R_1 to X , at other times has R_2 to X , and at other times has R_3 to X . McTaggart says that he cannot think of any term or any three relations that will answer these conditions. He does not pretend that this is a conclusive proof that A -characteristics are delusive. He thinks, however, that it should prepare us to accept the conclusion of his main argument without undue repugnance.

As McTaggart evidently does not lay much stress on this subsidiary argument, I shall not discuss it elaborately. I will content myself with pointing out a certain analogy and a certain difference between the view which McTaggart here takes of A -characteristics and the theory which I ascribed to Russell and discussed in Sub-section 2-24 of this chapter. According to that theory, A -characteristics are relational properties and not qualities, and the relations involved in them are temporal relations. Any utterance of the type-sentence " e is present" means that e is simultaneous with *this*; any utterance of the type-sentence " e is past" means that e is earlier than *this*; and any utterance of the type-sentence " e is future" means that e is later than *this*; where *this* is some experience of the speaker's, or some particular which he prehends, at the time when he makes the utterance.

The analogy, then, is that this theory of Russell's and McTaggart's account of A -characteristics in §§326 to 328 of *The Nature of Existence* both make them to be relational properties which involve temporal relations. The differences are as follows. McTaggart denies that the relata of these relations can themselves be events or moments. But, on Russell's theory, the relata *are* events, viz., experiences or prehended particulars which are simultaneous with the speaker's utter-

ance of the type-sentence. McTaggart denied that the relata could be events or moments, on the ground that, if they were, events could not change in respect of their *A*-characteristics. But Russell's theory brings in the change in respect of *A*-characteristics in spite of the relata being themselves events. According to his theory, the change consists in the fact that, although the relatum is always an event, it is a *different* event on each different occasion on which a speaker utters the same type-sentence.

I have thus brought out the analogies and differences between the two theories. For a further discussion of Russell's theory the reader may be referred back to Sub-section 2·24 of this chapter.

4. McTaggart's Use of the Specious Present.

It remains to notice the attempt which McTaggart makes to minimise the paradox of his denial of the reality of Time by appealing to the doctrine of the Specious Present.

McTaggart opens Chap. XXXIII of *The Nature of Existence* by admitting that the contention that temporal characteristics are delusive seems at first sight extremely paradoxical and is highly shocking to common sense. It is far more so than the contention that spatial characteristics are delusive. For it involves that each of us is profoundly mistaken, not only about external independent objects, but also about himself and his own acts and experiences. He reverts to this point in §§342 to 347, inclusive, and tries to show that the doctrine of the Specious Present makes the denial of the reality of Time less paradoxical than it seems at first sight. I will put what I take to be the essential point of the argument in my own way.

What any individual *S* prehends at any moment *t* as present is of finite duration; it stretches back from *t* by some finite amount *T*, where *T* is the characteristic duration of this person's Specious Present. Now, if presentness be not a delusive characteristic, the terms which it characterises must be either literally instantaneous or of finite duration. Let us consider these two alternatives in turn.

(a) If presentness belongs only to instantaneous terms,

everyone is grossly deluded whenever he prehends anything as present. For everything which is prehended is prehended as being of finite duration, and nothing that is of finite duration can really be present as a whole. The only terms which could have presentness are terms which no one ever prehends as such. The only terms which are prehended are of finite duration and therefore cannot have presentness. It may be remarked that this difficulty, if genuine, will arise even if we deny that there is a single neutral public time-series and confine our attention to the private time-series of each individual's experiences.

(b) Let us now take the other alternative, viz., that presentness characterises terms which are not instantaneous but are of short finite duration. No difficulty will now arise so long as we confine ourselves to the private time-series of various individuals and do not assume a public neutral time-series in which anything that has temporal characteristics has its own intrinsic position and duration.

But suppose that we do assume such a public neutral time-series. Then we can say of a certain state of prehension p_A in the individual A and of a certain state of prehension p_B in the individual B that they take place at the same moment t . Now it is possible that A 's Specious Present stretches back to a certain moment t_A whilst B 's Specious Present stretches back to a moment t_B which is earlier than t_A . In that case B will prehend at t certain events which happened between t_B and t_A , and he will prehend them all as present. Events simultaneous with these will not be *prehended* at t by A , since his Specious Present stretches back only to t_A . A will *remember* some such events, and will therefore judge that they are not present but past. Thus certain events which B prehends at t as *present* will be *contemporary with* certain events which A at t judges to be *past*. Now what is intrinsically present at a certain moment cannot be intrinsically simultaneous with anything which is then intrinsically past. Hence, either B at a certain moment prehends as present certain events which are in fact then intrinsically past, or A judges at a certain moment that certain events are past which are then in fact

intrinsically present. There must be either misprehension of, or false judgment about, the intrinsic temporal characteristics of events; and there may be both.

The upshot of the argument is this. Suppose we assume that there is a public neutral time-series, and that at a moment t intrinsic presentness belongs to everything that falls within a certain period T stretching backwards from t . Then we cannot reasonably identify T with the duration of any one individual's Specious Present at t . For the durations of different individuals' Specious Presents at the same moment may differ, and it would be quite arbitrary to identify T , the duration of the objective Present at t , with T_A rather than with T_B . Thus most people at most moments in their lives must be prehending as present certain events which are then past, or be judging to be past certain events which are then present. And it is quite possible that all people at all moments of their lives are subject to these temporal delusions.

McTaggart concludes that the assertion that temporal characteristics are delusive is not so paradoxical as it seems at first sight. It seems paradoxical because it forces us to treat as *misprehensions* all our prehensions of objects as having temporal characteristics. But we now see that, even if Time be real, all our prehensions of objects as having temporal characteristics must be largely delusive in detail.

I will now make some comments on this argument. (i) If the reader will refer back to the discussion of the Specious Present in Sub-section 1.3 of this chapter, he will see that the relevant part of that theory can be put in two different, but equivalent, ways. (a) We can say that at any moment t an instantaneous *act of prehension* grasps a total object which is not instantaneous but stretches back for a short period T from the date t at which the instantaneous act of prehension takes place. This is the alternative which McTaggart adopts in his argument. (b) We can say with equal propriety that one and the same instantaneous *event* is the object of every one of a whole compact series of successive instantaneous acts of prehension. This series constitutes a *process* of prehending which lasts for a finite time T , and throughout the

whole of this process the same instantaneous event *continues to be* prehended.

Suppose now that presentness belongs only to what is strictly instantaneous. On the first alternative, a person prehends at every moment a total object, which is not instantaneous, but is of finite duration and therefore cannot be present. On the second alternative, a person continues for a finite time T to prehend something, which is indeed instantaneous, but which is in fact past during the whole period throughout which it is being prehended.

(ii) On either alternative there is, no doubt, a certain amount of error in all prehension of objects as temporal. But surely it is absurd to suggest that it is comparable to the error which there would be if nothing were really temporal at all. For (a) it is concerned only with one temporal characteristic, viz., presentness. Nothing that has been said about the Specious Present prevents us from trusting our prehensions when they tell us that there is change and persistence, that some events overlap in time and others are separated, and so on.

(b) Even about presentness the error is very limited in extent. On the first interpretation, something which is in fact of finite duration seems to have a characteristic which in fact can belong only to what is instantaneous. But, after all, nothing seems to be present unless its duration is extremely short. And the different phases of any such short process are prehended as having degrees of presentedness which tail off to zero at its earlier boundary. It is perfectly easy to think of "pure presentness", as we think of "pure whiteness", viz., as an ideal limit which is suggested but not actually presented in prehension. We can think of this as belonging at any moment to the later (and maximally presented) boundary of any finite event which is prehended then as "present".

On the second interpretation, something continues to be prehended as present when it is in fact past. But, after all, nothing is thus misprehended for more than a very short time. If we are continually making this mistake about *something*, we never make it for more than a fraction of a second about *anything*.

(iii) If intrinsic presentness at any moment belongs, not to terms which are instantaneous, but to terms of finite duration, the misprehension on which McTaggart insists will be still more trivial. At a certain moment t A prehends as wholly present a slice which stretches back to $t - T_A$. If what is present at t really has duration, the only mistake which A may be making is about the extent of this duration. It may be longer or shorter than T_A . If T , the duration of what is intrinsically present at t , is *greater* than T_A , the duration of A 's Specious Present at t , *all* that A then prehends as present really is present. His only fault is to fail to prehend as present a more remote slice which is in fact present. This more remote slice he will wrongly judge to be past. If, on the other hand, T is *less* than T_A , *part* of what A prehends as present really is so. His only mistake is that he also prehends as present a more remote slice which is in fact past. So there is no reason, on this hypothesis, to doubt that either the whole or some part of what A prehends as present at t is in fact present at that moment. The only point on which he is liable to make a mistake is as to precisely how far backwards from t the characteristic of presentness extends. This is a mere error of detail; but to prehend objects as temporal if nothing be in fact temporal would be a fundamental error in principle.

It seems to me, then, that, even if we accept McTaggart's account of the Specious Present, it does little to diminish the paradox of his doctrine that all temporal characteristics are delusive.