

METAPHYSICS:

The Big Questions

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lecturing, for instance, is just my lecturing. Moreover, just as a real thought of a centaur, and a thought of a real centaur, are both of them just a thought of a centaur, so the present pastness of Whitrow's lecture, and its past presentness, are both just its pastness. And conversely, its pastness is its present pastness, so that although Whitrow's lecture isn't now present and so isn't real, isn't a fact, nevertheless its pastness, its *having* taken place, *is* a present fact, *is* a reality, and will be one as long as time shall last.

Notoriously, much of what is present isn't present permanently; the present is a shifting, changing thing. That is only to say that much of what is the case, of what is real and true, is constantly changing. Not everything, of course; some things that are the case also have always been the case and will always be the case. I imagine scientists have a special interest in such things. And among the things that not only are the case but always have been and always will be, are the laws of change themselves, I mean such laws as that if anything *has* occurred then for ever after it *will have* occurred (like Whitrow's lecture). These are the laws of what is now called *tense logic*, and the conception of the present that I have just been suggesting is deeply embedded in the syntax of that discipline. So that conception underlies, or anyhow seems to underlie, what is now a pretty flourishing systematic enterprise. . . .

8 The General Problem of Time and Change: an Excerpt from *Scientific Thought**

C. D. Broad

Alice sighed wearily, 'I think you might do something better with the time,' she said, 'than waste it asking riddles with no answers.'

'If you knew Time as well as I do,' said the Hatter, 'you wouldn't talk about wasting it.'

Lewis Carroll, *Alice in Wonderland*

. . . At first sight the problems of Time look very much like those of Space, except that the single dimension of Time, as compared with the three of Space, seems to promise greater simplicity. We shall point out these analogies at the beginning; but we shall find that they are somewhat superficial, and that Time and Change are extremely difficult subjects, in which spatial analogies help us but little.

The physicist conceives Time in much the same way as he conceives Space.

* From C. D. Broad, *Scientific Thought* (London: Routledge and Kegan Paul, 1923). Reprinted by permission of Routledge.

Just as he distinguishes Space from the matter in it, so he distinguishes Time from events. Again, mere difference of position in Time is supposed to have no physical consequences. It is true that, if I go out without my overcoat at 2 a.m., I shall probably catch cold; whilst, if I do so at 2 p.m., I shall probably take no harm. But this difference is never ascribed to the mere difference in date, but to the fact that different conditions of temperature and dampness will be contemporary with my two expeditions. Again, Time, like Space, is supposed to be continuous, and physicists suppose (or did so until quite lately) that there is a single time-series in which all the events of nature take place. This series is of one dimension, so that, as far as appears at present, Time is like a very simple Space consisting of a single straight line.

Just as we treat our geometry in terms of unextended points and their relations, so we treat our chronometry in terms of moments without duration and *their* relations. Duration in Time corresponds to extension in Space. Now, just as we never perceive points or even unextended particles, so we are never aware of moments or of momentary events. What we are aware of is finite events of various durations. By an event I am going to mean anything that endures at all, no matter how long it lasts or whether it be qualitatively alike or qualitatively different at adjacent stages in its history. This is contrary to common usage, but common usage has nothing to recommend it in this matter. We usually call a flash of lightning or a motor accident an event, and refuse to apply this name to the history of the cliffs at Dover. Now the only relevant difference between the flash and the cliffs is that the former lasts for a short time and the latter for a long time. And the only relevant difference between the accident and the cliffs is that, if successive slices, each of one second long, be cut in the histories of both, the contents of a pair of adjacent slices may be very different in the first case and will be very similar in the second case. Such merely quantitative differences as these give no good ground for calling one bit of history an event and refusing to call another bit of history by the same name. . . .

So far, the analogy between Time and Space has seemed to work very well. Duration has corresponded to length, before and after to right and left, and simultaneity to complete mutual overlapping. But, if we reflect a little more carefully, we shall see that the analogy between before and after and right and left is not so illuminating as it seems at first sight. The peculiarity of a series of events in Time is that it has not only an intrinsic *order* but also an intrinsic *sense*. Three points on a straight line have an intrinsic order, i.e. B is between A and C, or C is between B and A, or A is between C and B. This order is independent of any tacit reference to something traversing the line in a certain direction. By difference of sense I mean the sort of difference which there is between, say, ABC and CBA. Now the points on a straight line do not have an intrinsic sense. A sense is only assigned to them by correlation with the left and right hands of an imaginary observer, or by thinking of a moving body traversing the line in such a way that its presence at A is earlier than its presence at B, and the latter is earlier than its presence at C. In fact, if we want a spatial analogy to Time, it is not enough to use a straight line; we need a straight line with a fixed sense, i.e. the sort of thing which we usually represent by a line with an arrow-head on it.

Now the points on straight lines do not have any intrinsic sense, and so the meaning of the arrow-head is only supplied by reference to something which is at one point *before* it gets to another. Thus to attempt to understand before and after by analogy with a directed line is in the end circular, since the line only gets its sense through a tacit correlation with a series of events in Time.

Now the intrinsic sense of a series of events in Time is essentially bound up with the distinction between past, present, and future. A precedes B because A is past when B is present. . . .

We are naturally tempted to regard the history of the world as existing eternally in a certain order of events. Along this, and in a fixed direction, we imagine the characteristic of presentness as moving, somewhat like the spot of light from a policeman's bull's-eye traversing the fronts of the houses in a street. What is illuminated is the present, what has been illuminated is the past, and what has not yet been illuminated is the future. The fact that the spot is of finite area expresses the fact that the Specious Present is not a mere point but is of finite, though short, duration. Such analogies may be useful for some purposes, but it is clear that they explain nothing. On this view the series of events has an intrinsic order, but no intrinsic sense. It gains a sense, and we become able to talk of one event as earlier than another, and not merely of one event as between two others, because the attribute of presentness moves along the series in a fixed direction. But, in the first place, the lighting of the characteristic of presentness now on one event and now on another is itself an event, and ought therefore to be itself a part of the series of events, and not simply something that happens to the latter from outside. Again, if events have no intrinsic sense but only an intrinsic order, what meaning can we give to the assertion that the characteristic of presentness traverses the series of events *in a fixed direction*? All that we can mean is that this characteristic is *present* at B when it is *past* at A. Thus all the problems which the policeman's bull's-eye analogy was invented to solve are simply taken out of other events to be heaped on that particular series of events which is the movement of the bull's-eye. . . .

The difficulty about past, present, and future in general can be summed up in two closely connected paradoxes. (i) Every event has all these characteristics, and yet they are inconsistent with each other. And (ii) *events* change in course of time with respect to these characteristics. Now we believe ourselves to understand stand change in *things*, but to talk of *events* changing seems almost unintelligible. The connexion between the two paradoxes is, of course, that we get into the second directly we take the obvious step to avoid the first.

We have plenty of experience of things which appear to have incompatible characteristics, such as redness and greenness, or greatness and smallness. As a rule we remove this apparent inconsistency by pointing out that the facts have been stated elliptically, and that really a relation is involved. In the first example we say that what has been omitted is a relation to two different times. The full statement is that the thing is red at one time and green at another, and there is no inconsistency in this. In the second example we have no need even to bring in a relation to two different times. It is enough to point out that the predicates great and small themselves tacitly assume relations; so that the full statement is

that the thing is at once great as compared with one object and small as compared with another. In one of these two ways we always proceed when we have to deal with the apparent co-inherence of incompatible predicates in a single subject. We therefore naturally try one of these expedients to deal with the fact that every event is past, present, and future, and that these predicates are incompatible.

It seems natural and childishly simple to treat the problem in the way in which we treated the thing that was both red and green. We say: 'Of course the event E has futurity for a certain stretch of time, then it has presentness for a short subsequent stretch, and it has pastness at all other moments.' Now the question at once arises: 'Can we treat the change of an *event* in respect to its *temporal* qualities as just like the change of a *thing* with respect to qualities like red and green?'

To answer this question we must try to see what we mean when we say that a certain thing T changes from red to green. So far as I can see, our meaning is somewhat as follows: There is a certain long-lasting event in the history of the world. This stands out in a noticeable way from other events which overlap it wholly or partly. If successive short sections in time be taken of this long event, adjacent sections have spatial continuity with each other, and predominant qualitative resemblance to each other. On these grounds the whole long event is treated as the history of a single thing T. But, although adjacent short sections are *predominantly* alike in their qualities, there may be adjacent sections which differ very markedly in *some* quality, such as colour. If you can cut the history of the thing in a certain moment, such that a slice of its history before that is red and a slice after that is green, we say that the thing T has changed from red to green at that moment. To say that a thing changes, thus simply means that its history can be cut up into a series of adjacent short slices, and that two adjacent slices may have qualitative differences.

Can we treat the change of an event from futurity, through presentness, to pastness in the way in which we have treated the change of a thing (say a signal lamp) from red to green? I think it is certain that we cannot; for two closely connected reasons. In the first place, the attempt would be circular, because the change of things will be found on further analysis to involve the change of events in respect to their temporal characteristics. We have assumed that the history of our signal lamp can be analysed into a series of shorter adjacent events, and that it was true of a certain pair of these that the earlier was red and the later green. But to say that this series of events passes from earlier to later (which is necessary if we are to distinguish between a change from red to green and a change from green to red) simply means that the red sections are past when the green ones are present and that the red ones are present when the green ones are future. Thus the notion of the history of the lamp as divisible into a series of sections, following each other in a certain direction, depends on the fact that each of these sections itself changes from future, through present, to past. It would therefore be circular to attempt to analyse changes in events in the way in which we have analysed changes in things, since the latter imply the former.

Apart from this objection, we can see directly that the change of events can-

not be treated like the changes of things. Let us take a short section of the history of the lamp, small enough to fall into a Specious Present, and such that the light from the lamp is red throughout the whole of this section. This short event was future, became present, and then became past. If we try to analyse this change, in the way in which we analysed the change of the lamp from red to green we shall have to proceed as follows: We shall have to divide this red event into shorter successive sections, and say that the latest of these have futurity, the middle ones presentness, and the earliest ones pastness. Now this analysis obviously does not fit the facts. For the fact is that *the whole* event was future, became present, and is now past. Clearly no analysis which splits up the event into successive sections with different characteristics is going to account for the change in the temporal attributes of the event as a whole.

We see then that the attempt to reconcile the incompatible temporal qualities of the same event by appealing to change, in the ordinary sense of the word, is both circular and ineffective. The circularity becomes specially glaring when put in the following way: The changes of things are changes *in Time*; but the change of events or of moments from future, through present, to past, is a change *of Time*. We can hardly expect to reduce changes of Time to changes in Time, since Time would then need another Time to change in, and so on to infinity.

We seem, therefore, to be forced back to the other type of solution, viz., that the predicates, *past*, *present*, and *future*, are of their very nature relational, like *large* and *small*. Unfortunately we have already had occasion to look at some solutions of this type – the policeman's bull's-eye and the different cognitive relations – and the omens are not very favourable.

If we reflect, we shall notice that there are two quite different senses in which an entity can be said to change its relational properties. An example of the first is where Tom Smith, the son of John Smith, becomes taller than his father. An example of the second is where Tom Smith ceases to be the youngest son of John Smith, and becomes the last son but one. What is the difference between these two cases? In the first we have two partially overlapping life-histories, T and J. If we cut up both into successive short sections we find that the earlier sections of T have the relation of 'shorter than' to the contemporary sections of J, whilst the later sections of T have the relation of 'taller than' to the contemporary sections of J. In the second we have quite a different state of affairs. When we say that T is the youngest son of J we mean that there is no entity in the universe of which it is true to say both that it is a son of J and that it is younger than T. When we say that T has ceased to be the youngest son of J we mean that the universe does contain an entity of which it is true to say both that it is a son of J and that it is younger than T. In the first case then, we simply have a difference of relation between different corresponding sections of two existing long events. In the latter, the difference is that a certain entity has changed its relational properties because a second entity, which did not formerly exist (and therefore could stand in *no* relation whatever to T), has begun to exist, and consequently to stand in certain relations to T, who is a member of the same universe as it.

Now it is obvious that the change that happens to an event when it ceases to

be present and becomes past is like the change of Tom Smith when he ceases to be the youngest son of John Smith; and the continuous retreat of an event into the more and more remote past is like the successive departure of Tom from being the 'baby' of the family, as John Smith (moved by the earnest exhortations of the Bishop of London) produces more and more children. A Specious Present of mine is just the last thin slice that has joined up to my life-history. When it ceases to be present and becomes past this does not mean that it has changed its relations to anything to which it was related when it was present. It will simply mean that other slices have been tacked on to my life-history, and, with their existence, relations have begun to hold, which could not hold before these slices existed to be terms to these relations. To put the matter in another way: When an event, which was present, becomes past, it does not change or lose any of the relations which it had before; it simply acquires in addition new relations which it *could* not have before, because the terms to which it now has these relations were then simply non-entities.

It will be observed that such a theory as this accepts the reality of the present and the past, but holds that the future is simply nothing at all. Nothing has happened to the present by becoming past except that fresh slices of existence have been added to the total history of the world. The past is thus as real as the present. On the other hand, the essence of a present event is, not that it precedes future events, but that there is quite literally *nothing* to which it has the relation of precedence. The sum total of existence is always increasing, and it is this which gives the time-series a sense as well as an order. A moment t is later than a moment t' if the sum total of existence at t includes the sum total of existence at t' together with something more.

We are too liable to treat change from future to present as if it were analogous to change from present to past or from the less to the more remote past. This is, I believe, a profound mistake. I think that we must recognise that the word 'change' is used in three distinct senses, of which the third is the most fundamental. These are (i) Change in the attributes of things, as where the signal lamp changes from red to green; (ii) Change in events with respect to pastness, as where a certain event ceases to be present and moves into the more and more remote past; and (iii) Change from future to present. I have already given an analysis of the first two kinds of change. It is clear that they both depend on the third kind. We analysed the change in colour of the signal lamp to mean that a red section of its history was followed by a green section of its history. This is sufficient analysis for a past change of quality, dealt with reflectively in retrospect. But, when we say that the red section precedes the green section, we mean that there was a moment when the sum total of existence included the red event and did not include the green one, and that there was another moment at which the sum total of existence included all that was included at the first moment and also the green event. Thus a complete analysis of the qualitative changes of things is found to involve the coming into existence of events.

Similarly we have seen that the second kind of change involves the third. For the change of an event from present to past turned out to depend on the fact

the sum total of existence increases beyond the limits which it had when our given event came into existence.

Let us call the third kind of change *Becoming*. It is now quite evident that becoming cannot be analysed into either of the two other kinds of change, since they both involve it. Moreover, we can see by direct inspection that becoming is of so peculiar a character that it is misleading to call it change. When we say that a thing changes in quality, or that an event changes in pastness, we are talking of entities that exist both before and after the moment at which the change takes place. But, when an event becomes, it *comes into existence*; and it was not anything at all until it had become. You cannot say that a future event is one that succeeds the present; for a present event is defined as one that is succeeded by nothing. We can put the matter, at choice, in one of two ways. We can either say that, since future events are non-entities, they cannot stand in any relations to anything, and therefore cannot stand in the relation of succession to present events. Or, conversely, we can say that, if future events succeeded present events, they would have the contradictory property of succeeding something that has no successor, and therefore they cannot be real.

It has long been recognised that there are two unique and irreducible, though intimately connected types of judgment. The first asserts that S is or exists; and is called an *existential* judgment. The second asserts that S is so and so, or has such and such a characteristic. This may be called a *characterising* judgment. The connexion between the two is that a thing cannot be so and so without *being*, and that it cannot be without being *so and so*.¹ Meinong, with the resources of the German tongue at his disposal, coins the convenient words *Sein* and *Sosein*. Now it seems to me that we have got to recognise a third equally fundamental and irreducible type of judgment, viz., one of the form: S becomes or comes into existence. Let us call these *genetic* judgments. I think that much of the trouble about Time and Change comes from our obstinate attempts to reduce such judgments to the characterising form. Any judgment can be *verbally* reduced to this form. We can reduce 'S is' to 'S is existent.' But the reduction is purely verbal, and those who take it seriously land in the sloughs of the Ontological Argument. Similarly 'S is future' is verbally a judgment that ascribes a characteristic to an event S. But, if we are right, this must be a mistake; since to have a characteristic implies to exist (at any rate in the case of particulars, like events), and the future does not exist so long as it is future.

Before passing on there is one more verbal ambiguity to be noted. The same word *is* is used absolutely in the existential judgment 'S is', and as a connective tie in the characterising judgment 'S is P.' Much the same is true of the word *becomes*. We say 'S becomes', and we say 'S becomes P.' The latter type of judgment expresses qualitative change, the former expresses coming into existence.

The relation between existence and becoming (and consequently between characterisation and becoming) is very intimate. Whatever is has become, and the sum total of the existent is continually augmented by becoming. There is no such thing as *ceasing* to exist; what has become exists henceforth for ever. When we say that something has ceased to *exist* we only mean that it has ceased to be

present; and this only means that the sum total of existence has increased since any part of the history of the thing became, and that the later additions contain no events sufficiently alike to and sufficiently continuous with the history of the thing in question to count as a continuation of it. For complete accuracy a slight modification ought to be made in the statement that ‘whatever is has become’. Long events do not become bodily, only events short enough to fall in Specious Presents become, as wholes. Thus the becoming of a long event is just the successive becoming of its shorter sections. We shall have to go more fully into the question of Specious Presents at a later stage.

We are left with two problems which we may hope that the previous discussions will help us to solve. (i) If the future, so long as it is future, be literally nothing at all, what are we to say of judgments which profess to be about the future? And (ii) What, in the end, is our answer to the original difficulty that every event is past, present, and future, and that these characteristics are mutually incompatible?

(i) Undoubtedly we do constantly make judgments which profess to be about the future. Weather forecasts, nautical almanacs, and railway time-tables, are full of such judgments. Admittedly no judgment about the future is absolutely certain (with the possible exception of the judgment that there will always be events of some kind or other); but this is irrelevant for our present purpose. No historical judgment about the past is absolutely certain either; and, in any case, our question is not whether we can have *certain* knowledge about the future, but is the prior question: What are we really *talking about* when we profess to make judgments about the future, and what do we *mean* by the truth or falsity of such judgments?

We cannot attempt to answer these questions till we have cleared up certain points about the nature of judgments in general. First, we must notice that the question: ‘What is a certain judgment about?’ is ambiguous. It may mean: ‘What is the subject or subjects of the judgment?’ or: ‘To what fact does the judgment refer?’ The fact to which a judgment refers is the fact that renders it true or false. It is true, if it has the peculiar relation of concordance to the fact to which it refers; and false, if it has the relation of discordance to this fact. Discordance, I think, is a positive relation which is incompatible with concordance; it is not the mere absence of concordance. I see no reason to suppose that the reference of a judgment to a fact is a third independent relation over and above the relations of concordance and discordance. I take it to be just the disjunction ‘concordance-or-discordance’; and I suppose that to say that J refers to F simply means that F is the fact which either makes J true by concording with it or false by discording with it.

Now people make many judgments, which have nothing to do with the future, but are nevertheless apparently about objects which do not, in fact, exist. Many English peasants, in the Middle Ages, must have made the judgments ‘Puck exists’ or ‘Puck has turned the milk.’ And the latter of these, of course, implies the former. I will assume (in spite of Sir Conan Doyle) that Puck does not in fact exist. What were these men referring to, in our sense of the word? To answer this we have simply to ask: What fact made their judgments false? The

answer is that it is the negative fact that no part of the universe was characterised by the set of characteristics by which they described Puck to themselves. Their judgment boils down to the assertion that some part of the existent is characterised by this set of characteristics, and it is false because it discords with the negative fact that the set in question characterises no part of the universe. Naturally they did not know that this was what their judgment referred to, or they would not have made it. But, in our sense of reference, there is no reason why a person who makes a judgment should know what it refers to.

Now it would obviously be absurd to say that what these men were *talking about* was the negative fact that no part of the universe has the characteristics which they ascribe to Puck. Hence we see the need of distinguishing between what a judgment refers to and what the person who makes the judgment is talking about. What they were talking about was a certain set of characteristics, viz., those by which they described Puck to themselves. This may be called the logical subject of their judgment. It is something real and independent of the judging mind; having the kind of reality and independence which is characteristic of universals, and not, of course, that which is characteristic of particular existents. Thus, although there is no such being as Puck, people who profess to be judging about him are not judging about nothing (for they are judging about a set of characteristics which is itself real, though it does not happen to characterise any particular existent). Nor are they referring to nothing (for they are referring – though they do not know it – to an important negative fact about the existent).

Since the non-existence of Puck is compatible with the fact that the judgment ‘Puck exists’ is an intelligible statement about something real, we may hope that the non-existence of the future may prove to be compatible with the existence and intelligibility of judgments which profess to be about the future. Up to a point the two kinds of judgment can be treated in much the same way. The judgment which is *grammatically* about ‘Puck’ proves to be *logically* about the set of characteristics by which the assertor describes Puck to himself. Similarly the judgment ‘To-morrow will be wet’, which is grammatically about ‘to-morrow’, is logically about the characteristic of wetness. The non-existence of to-morrow is therefore consistent with the fact that the judgment is about something.

Still there is one very important difference between the two kinds of judgment. Judgments like ‘Puck exists’ are not only *about* something; they also *refer to* some fact which makes them true or false. This fact may be negative, but it is a real fact about the existent world. If we ask what fact judgments ostensibly about the future refer to, we must answer that there is no such fact. If I judge, to-day that to-morrow will be wet, the only fact which this judgment can refer to, in our sense of the word, is the fact which renders it true or false. Now it is obvious that this fact is the wetness or fineness of to-morrow when to-morrow comes. To-day, when I make the judgment, there is no such fact as the wetness of to-morrow and there is no such fact as the fineness of to-morrow. For these facts can neither of them begin to be till to-morrow begins to be, which does not happen till to-morrow becomes to-day. Thus judgments which profess to

be about the future do not refer to any fact, whether positive or negative, at the time when they are made. They are therefore at that time neither true nor false. They will become true or false when there is a fact for them to refer to; and after this they will remain true or false, as the case may be, for ever and ever. If you choose to define the word *judgment* in such a way that nothing is to be called a judgment unless it be either true or false, you must not, of course, count 'judgments' that profess to be about the future as judgments. If you accept the latter, you must say that the Law of Excluded Middle does not apply to all judgments. If you reject them, you may say that the Law of Excluded Middle applies to all genuine judgments; but you must add that 'judgments' which profess to be about the future are not genuine judgments when they are made, but merely enjoy a courtesy title by anticipation, like the eldest sons of the higher nobility during the lifetime of their fathers. For convenience, I shall continue to speak of them as judgments.

So far then, we have determined two facts about judgments which profess to be concerned with the future. (*a*) They are about something, viz., some characteristic or set of characteristics; and (*b*) they do not refer to any fact at the time when they are made. This is clearly not a complete analysis. Two further points need to be cleared up. (*a*) If such judgments when made do not refer to anything, how is it that, if certain events become, the judgment is verified, and, if other events become, it is refuted? (*b*) If such judgments are about characteristics, what precisely is it that they assert about these characteristics?

(*a*) Suppose I judge to-day that to-morrow will be wet. Nothing that may happen to-morrow will be relevant to this judgment except the state of the weather, and nothing will then make it true except the wetness of the weather. This is true enough, but it does not prove that the judgment refers to any fact, in our sense of reference. With *any* judgment we can tell what *kind* of fact will verify or refute it, as soon as we know what the judgment is about and what kind of assertion it makes. But no amount of inspection of a judgment itself will show us the *particular fact* which makes it true if it is true and false if it is false. There is therefore no inconsistency between the statement that we can know at once what *kind of fact* would verify a judgment about the future, and the statement that such judgments do not refer to any *fact* when made.

(*b*) As regards any judgment we have to consider not only what it is about, but also what it asserts about its subject or subjects. These two questions are not altogether free from ambiguity, and this ambiguity must be cleared up before we consider the special question as to what judgments that profess to be about the future assert. (1) There is the confusion between what a judgment is about and what it refers to. This we have already dealt with. (2) There is the distinction between what a judgment is ostensibly about and what it is really about. If you had asked a peasant, who said that Puck had turned the milk, what he was talking about, he would have said that he was talking about a certain individual fairy. This is what the judgment professes to be about. What it is really about is a certain set of characteristics. Roughly speaking, we may say that what a judgment professes to be about can be determined by a grammatical analysis of the sentence in which the judgment is expressed. Although there is

always a connexion between the grammatical structure of a sentence and the logical structure of a judgment, it is highly dangerous to suppose that what the sentence is grammatically about is the name of what the judgment is logically about. (3) When these two confusions have been set aside and we are quite definitely dealing with the *judgment*, and neither with the *fact* to which it refers nor the *sentence* which expresses it, there is still a difficulty as to how much is to be included under the head of what the judgment is about and how much is to be included under the head of what the judgment asserts. Take first a very simple characterising judgment, like '3 is a prime'. What is this about, and what does it assert? We should all agree that it is at any rate about the number 3. But is it about the characteristic of primeness too? If you say Yes, what is there left for it to assert? If you say No, how can you face the obviously equivalent judgment 'Primeness is a characteristic of 3'? Exactly the same kind of difficulty arises over a relational proposition, like '3 is greater than 2'. We should all at this time of day agree that it is at least about the numbers 2 and 3. But is it or is it not about the relation of greater? I think that we must say that the former judgment is about primeness as much as it is about the number 3, and that the latter is about the relation of greater as much as it is about the numbers 2 and 3. Really it is as misleading to say that the first asserts primeness as to say that it asserts 3. The minimum that it asserts is the primeness of 3. Similar remarks apply to the second. If we like to use the useful word *tie*, which Mr W.E. Johnson² has lately introduced into logic, we might say that the first judgment is about the number 3 and the characteristic of primeness, and asserts that they are connected by the characterising tie. The second is about the numbers 3 and 2 and the relation greater, and asserts that they are connected by the relational tie in the order 3 to 2. But we might equally well distinguish different kinds of assertion, and say that the first is about the number 3 and the characteristic of primeness, and makes a characterising assertion about them. In the case of the second we should talk of a relating assertion.

So far we have purposely chosen examples which are about timeless objects, like numbers. Let us now take the series of judgments: 'It has rained', 'It is raining', and 'It will rain', which are about events, and contain an essential reference to time. The first may be analysed as follows: 'There is an event which is characterised by raininess, and the sum total of existence when the judgment is made includes all and more than all which it includes when this event becomes'. The second may be analysed as follows: 'There is an event which is characterised by raininess, and the sum total of existence is the same when this event becomes and when the judgment is made.' Thus judgments about the past and the present can be analysed into judgments which involve the four familiar types of assertion – the existential, the characterising, the genetic, and the relational. But the judgment that it will rain cannot be analysed in a similar way. It cannot mean anything that begins with the statement: 'There is an event', for the only events that there are are the events that have become up to the time when the assertion is made; the sum total of existence does not contain future events. We can only restate the judgment in the form: 'The sum total of existence will increase beyond what it is when the judgment is made, and some part

of what will become will be characterised by raininess'. We cannot then analyse *will* away, as we can *has been* and *is now*. Every judgment that professes to be about the future would seem then to involve two peculiar and not further analysable kinds of assertion. One of these is about becoming; it asserts that further events will become. The other is about some characteristic; it asserts that this will characterise some of the events which will become. If then we ask: What are judgments which profess to be about future events really about? the answer would seem to be that they are about some characteristic and about becoming. And if it be asked: What do such judgments assert? the only answer that I can give is that they assert that the sum total of existence will increase through becoming, and that the characteristic in question will characterise some part of what will become. These answers are compatible with the non-existence of the future. The only 'constituents' of the judgment, when it is made, are the characteristic – which has the kind of reality which universals possess – and the concept of becoming. About these the judgment makes certain assertions of a quite peculiar and not further analysable kind. Something called *to-morrow* is not a constituent of judgments which are grammatically about 'to-morrow', any more than an individual called *Puck* is a constituent of judgments which profess to be about 'Puck'.

I have thus tried to show that there is an extreme difference between judgments which profess to be about future events and those which are about past or present events. The former, when made, do not refer to anything, and therefore are not literally true or false, though it is possible for anyone who understands their meaning to see what kind of fact *will* eventually make them true or false as the case may be. Again, *is now* and *has been* need not be taken as new and ultimate types of assertion, but *will be* apparently must be so taken. Nevertheless, although the future is nothing and although judgments which profess to be about future events refer to nothing, they are not about nothing. They are about some characteristic and about becoming; and, so far as I can see, they make an unique and not further analysable kind of assertion about these terms. . . .

Notes

- 1 *Über die Stellung der Gegenstandstheorie* (Leipzig: R. Voitlander, 1907), and elsewhere [e.g., Alexius Meinong, 'The Theory of Objects', in R. M. Chisholm (ed.), *Realism and the Background of Phenomenology* (Glencoe, Ill.: The Free Press, 1960)].
- 2 W. E. Johnson *Logic* (Cambridge: Cambridge University Press) vol. i.