NARRATIVE SENTENCES

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I mean to isolate and to analyze here a class of sentences which seem to me to occur most typically in historical writings, although they appear in narratives of all sorts and may even enter into common speech in a natural kind of way. I shall designate them as "narrative sentences". Their most general characteristic is that they refer to at least two time-separated events though they only describe (are only about) the earliest event to which they refer. Commonly they take the past tense, and indeed it would be odd — for reasons I shall want to consider in this paper — for them to take any other tense. The fact that these sentences may constitute in some measure a differentiating stylistic feature of narrative writing is of less interest to me than the fact that use of them suggests a differentiating feature of historical knowledge. But even this is less interesting to me than the fact that narrative sentences offer an occasion for discussing, in a systematic way, a great many of the philosophical problems which history raises and which it is the task of the philosophy of history to try to solve. Indeed I shall introduce them in the context of some of these problems. My thesis is that narrative sentences are so peculiarly related to our concept of history that analysis of them must indicate what some of the main features of that concept are. And they help show why the proper answer to the tedious question "Is history art or science?" is: "Neither."

I

Peirce wrote to Lady Welby: "... our idea of the past is precisely the idea of that which is absolutely determinate, fixed, fait accompli, and dead, as against the future which is living, plastic, and determinable ..." 1 Certainly this is what

1 Irwin Lieb ed., Charles S. Peirce's Letters to Lady Welby (New Haven, 1953), 9. Peirce says this in the midst of discussing his theory of Categories. This is complicated enough, but he is also en passant giving an account of the sorts of reasons which must have led Kant to the view that Time is a "form of the internal sense alone". From the
most of us think. But could we hold a different view? For a variety of reasons, some men have held that the future is fixed and determinate as well as the past.\(^2\) Suppose all we know about Caesar is that he existed. Whether or not he was ever in any particular place, say England, is not known. Yet we might appeal to a venerable notion, the Principle of Excluded Middle, and say that either he was there or not, and that at most and at least one of these alternatives is true. Why might not someone in the fifth century B.C. have invoked the identical Principle to argue that Caesar either will be in England or not? Perhaps because nobody then could have known that Caesar would exist the way we know that he has existed. Still, he might have said that either Caesar will exist or not, and that one of these must be true. And if the Principle may be invoked with regard to this future matter of fact, why not for all? But what could the name “Caesar” mean to such a person, just what sort of thing is it he is saying will exist or not? Well, I have supposed that all we know is that he existed. Doubtless this is unrealistic. But flesh a description out as we will, what is to have prevented a fifth century B.C. speaker from saying that someone of just that description will exist or not? And should he so have spoken, why should the Principle not guarantee that one of the two alternatives will be true? Or does it hold only for the past and present? After all, there are four possibilities, including the possibility that the future is determinate and the past “living, plastic, and determinable”. Why is it that our “idea” of past and future corresponds only to the possibility which Peirce described? Granted that this is our idea, the question remains why.

Our natural temptation these days is to say that it is a matter of definition. Consider, however, the wild fantasy of the whole course of history going

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\(^2\) For example, Aristotle’s unidentified opponent in De Interpretatione, ch. ix. Aristotle there writes: “In the case of that which is or which has taken place, propositions, whether positive or negative, must be true or false. . . . When the subject, however, is individual, and that which is predicated of it relates to the figure, the case is altered.” His opponent argues that it is not altered. For an ingenious defense of Aristotle’s metaphysics here, see Richard Taylor, “The Problem of Future Contingencies”, Philosophical Review, LXVI (1957), 1-28. A bibliography of recent literature may be found in Taylor, loc. cit., footnote 2. Colin Strang, “Aristotle and the Sea Battle”, Mind LXIX (1960), 447-465, offers the closest reconstruction of the argument, and a persuasive rebuttal of the logical determinist. The conclusions both of Taylor and Strang are, I think, compatible with the main thesis of this paper.
suddenly into reverse, like a film strip running backwards: after a spell of time would come the sound "thgil eb ereht teL" and darkness would once again settle upon the face of the waters. The future would then be the exact mirror-image of the past, and there would be a rule by means of which an exactly corresponding sentence about the future could be found for every true sentence about the past. In such a case the future would be on an exact footing with the past in point of determinateness. True, we cannot put ourselves in this picture: nobody could know that what was happening was the reversal of history – for this would destroy the symmetry. Perhaps what we mean by the indeterminateness of the future is that we can put ourselves in the picture, there is room for us to move. But for that matter we can, in imagination at least (and this is all that matters here) put ourselves into the past, e.g., as in A Connecticut Yankee in King Arthur's Court. In fact, of course, there is no room in Arthur's England for twentieth-century strangers. But then there would also be no room in the corresponding segment of the future were history to reverse itself. No one is saying that history will do this: but it is not a matter of definition that it won't.

Let us say that we are empirically certain that the future will not be the image of the past. What then will the future be like? People may guess this and that, but in contrast with our knowledge of what has taken place, we are very uncertain indeed with regard to what will happen. Can this be what is meant by the past being determinate and the future merely determinable? So that our "idea" is based not upon some definition of past and future but rather upon some fact about our knowledge of each? Then Pierce's statement is false. We are always revising our beliefs about the past, and to suppose them "fixed" would be unfaithful to the spirit of historical inquiry. In principle any belief about the past is liable to revision, just in the same way perhaps as any belief about the future. Actually we are sometimes more certain about the future than we are about the past: at a given moment I am far more certain where a falling pine-cone will land than I am with regard to where it fell from. At best the difference is one of degree.

Peirce also wrote "the existent is determinate in every respect". Possibly what we want then is a kind of ontological interpretation of his original claim. The future, if it is not determinate, does not exist. But if the contrast is to work, the past must exist, however this is to be understood. This may even take care of the Principle of Excluded Middle! Since there is nothing for sentences purportedly about the future to refer to, the question of their truth or falsity fails to arise. Or we might say: the past has been constructed,
but the future has not, and so make a somewhat punning extension of
Intuitionism to get rid of that vexing Principle. Of course it would hardly
do to say that our idea of the past is of something existent and our idea of
the future of something non-existent. If anything, our ordinary idea of the
past is of something that has existed while our idea of the future is of
something which will exist. Very few people tend to think that the past
exists. But some very good philosophers have thought his way. “It appears
to me that, once an event has happened, it exists eternally”, writes C. D.
Broad. For surely, he argues, we can meaningfully say that a certain event
is past, that is, stands in a certain temporal relation with some other event.
But if it did not exist, the relation would collapse for want of a term, and
our statement about it would be nonsense. So all such events must constitute
a "permanent part of the universe"? This seems a very weak argument
indeed to support so vast a consequence, and mutatis mutandis we might as
consistently argue that if we can meaningfully say that a certain event is
future, that event must either exist eternally or all statements about the future
are nonsense. But let us suppose that Broad is right. And let us tell a
metaphysical fairy-tale to support our idea about the past and future which
this interpretation of Peirce's statement of it seems to require. Notice that
this metaphysical excursus does not explain why we have the idea that the
past is fixed and the future fluid. It only shows what the world may be like
if our idea is true.

Let the Past be considered a great sort of container, a bin in which are
located, in the order of their occurrence, all the events which have ever
happened. It is a container which grows moment by moment longer in the
forward direction, and moment by moment fuller as layer upon layer of
events enter its fluid, accommodating maw. The forward lengthening of the
Past is irrepressible, and regular; and once within the container, a given
event E and the growing edge of the Past recede away from one another
at a rate which is just the rate at which Time flows. E gets buried deeper
and deeper in the Past as layer after layer of other events pile up. But this
constantly increasing recession away from the Present is the only change E
independently argued. The entire difficulty arises from the view that the truth or
falsity of a sentence S is independent of the time at which S is uttered. Strawson must
argue that sentences as such are never either true of false, only statements are; and
whether these are true or false is very much a matter of the time at which they are
asserted. But if we regard sentences without the appropriate temporal information as
incomplete, we may then regard sentences when appropriately completed as true
independently of the time of their utterance. But this solves none of the epistemological
problems I am to be concerned with.

See the elementary discussion of this in A. Heyting, Intuitionism: An Introduction
(Amsterdam, 1956), 1 ff. Heyting would justifiably rule out my "extension" as "metaphysical".


Ibid.
is ever to suffer: apart from this it is utterly impervious to modification. $E$, moreover, will generally be but one of a set of events which enter the Past together. In this case, $E$ and its contemporaries constitute an exclusive class, in the sense that no further event will henceforward join them as, so to speak, a new contemporary. So the Past is not to change either through any modification of $E$ apart from its momentarily increasing pastness, or through the addition of some other event contemporary with $E$ which $E$ lacked as a contemporary upon its entry into pasthood.

This “model” construes events as time-extended entities in a Universe extended in time, a view conceivably licit. What is not quite licit in the model is that part of it which suggests that $E$ and its contemporaries are exact co-evals, having each the same amount of temporal thickness and coincident termini. Common use of the term “event” is fairly chaotic, and we are likely to apply it to occurrences of varying duration, even null duration. Seeing a robin, for instance, is perhaps an important event in the bird-watcher’s morning. But such an event might be classed with what Ryle has called “achievements”, and can, in his phrase, be dated but not clocked.8 We can both date and clock events such as flashes of lightning. We speak of the French Revolution or the Civil War as major events in the history of France and America respectively, and these are better measured by the calendar than the clock provided there were general agreement as to where to begin in time. Fidelity to usage requires us then to think of events as of varying duration, the only alternative being arbitrarily to decide that an event is exactly so long, say three minutes.9 But if we follow usage, we may be obliged to say that $E$, though it may have many contemporaries, might still have no precise co-evals, so that a line drawn perpendicular to the direction of time at the anterior terminus of $E$ would conceivably not intersect the anterior terminus of any of $E$’s contemporaries. This, however, has untoward consequences for that part of our model which has events piling up, layer after layer, and proceeding in an orderly manner away from the present. For suppose that $E$ has wholly entered the Past while its contemporary $E'$ has only partially achieved pasthood, having part of its career yet to run. One may now ask where is the rest of $E'$ when that part of it which overlaps $E$ is in the Past. Somehow one feels uneasy thinking of it protruding like a worm half buried in a can of dirt. True, we can say that that part of it which is not in the Past is in the Future, $E'$ merely passing from one


9 E.g. Bertrand Russell, *The Analysis of Matter* (London, 1927), 294. “... no event lasts for more than a few seconds at most.” By “event” Russell means a component of an object having physical structure. On the other hand, “Whether to call the Battle of Waterloo an event is a matter of words,” (293). But see M. Mandelbaum, *The Problem of Historical Knowledge* (New York, 1938), 254 and passim. Mandelbaum regards the Reformation as an event. I shall later introduce the term “temporal structure” for very large events.
container into another. But suppose that \( E' \) overlaps both \( E \) and \( E'' \) though neither of these overlaps one another. Then just when \( E \) is wholly in the Past, \( E'' \) is wholly in the Future. But then the Future exists after all! And the desired contrast between the determinateness of the Past and the indeterminateness of the Future falls through. No, we shall have to say that the rest of \( E' \) doesn't exist. But suppose the "rest" of \( E' \) fails to happen? Well, then, the Past must contain fragments of events as well as events. With this lame addendum, we may continue to employ the model, for what it is worth.

I admit that it is not worth much. The Future, for one thing, has been dealt with very casually. But anyway, "there", in the Past, are situated all the events which ever have happened, like frozen tableaux. They are stowed in the border of their happening, they overlap (for they are of varying sizes) and interpenetrate (for an event \( E \) may have another event \( E' \) as a part of itself). And more importantly, they cannot change, nor can the order amongst them change, nor can the Past acquire fresh contents save at its forward end. Why they cannot change is not yet clear, but there must be strong reasons. For according to an old tradition not even God can undo what once has been done: "...niente diminisce la sua omnipotenza il dire che Iddio non può fare che il fatto non sia fatto." \(^{10}\) But I shall leave that problem for the time, and turn to the matter of describing our inert Past.

II

By a full description of an event \( E \) I shall mean a set of sentences which, taken together, state absolutely everything that happened in \( E \). Since the sequence of happening is important, we should want this order reflected in the full description by some device or other. Indeed, a full description will be an order-preserving account of everything that happened. As such, a full description bears some analogy to a map: there is an isomorphism between the full description and the event of which it is true. Now with maps there are two sorts of problems. First, there are things in the mapped territory that not designated in the map, so that in common practice maps are incomplete, and do not exactly duplicate the territory. \(^{11}\) Second, maps go out

\(^{10}\) Galileo Galilei, Dialogo sopra i due massimi sistemi del mondo, in Opere (Florence, 1929-39), VII, 129.

\(^{11}\) I appreciate the fact that it is important for maps to be incomplete. "For when our map becomes as large and in all other respects the same as the territory mapped -- and indeed long before this stage is reached -- the purposes of a map are no longer served. There is no such thing as an unabridged map; for abridgment is intrinsic to map making." Nelson Goodman, "The Revision of Philosophy", in Sidney Hook ed., American Philosophers at Work (New York, 1956), 84. But of course the use to which my "map" is to be put requires completeness.
of date in virtue of the fact that territories change: coast-lines get washed away, cities are destroyed and others spring up, boundaries are drawn afresh as a consequence of wars and treaties. This second problem does not arise for full descriptions of past events inasmuch as the Past does not change. But then neither need the first problem. We can imagine a description which really is a full description, which tells everything and stands in perfect isomorphism with an event. Such a description then will be definitive: it shows the event wie es eigentlich gewesen ist. The maps of all the events may now be supposed assembled, to constitute a (really the) map of the whole Past. This global map then changes only in the way the Past itself changes: it gets added to along the forward edge. It now hardly matters whether we talk about the Past or its full description.

I now want to insert an Ideal Chronicler into my picture. He knows whatever happens the moment it happens, even in other minds. And he is to have the gift of instantaneous transcription: everything that happens across the whole forward rim of the Past is set down by him, as it happens, the way it happens. The resultant running account I shall term the Ideal Chronicle (hereafter referred to as I.C.). Once E is safely in the Past, its full description is in the I.C. We may now think of the various parts of the I.C. as accounts to which practicing historians endeavor to make their accounts approximate.

Let us say that every event in the Past now has its full description shelved somewhere in the historian’s heaven. Remember: the events in the Past are “fixed, fait accompli, and dead”. Only a modification in the events could force a modification in the I.C. But this is ruled out. The I.C. is then necessarily definitive. By contrast the actual accounts offered to their audience by the working historians are always liable to modification. They may contain false sentences, they may have true sentences asserted in the wrong order, and they are almost certainly incomplete. At times bogus evidence, or wrong interpretations of bona fide evidence may cause our historians to exchange a true sentence for a false one, so we shall want to distinguish a correct modification of an historical account. This, on our present view, will consist in bringing it into line with the I.C. Such modification can then take at most three forms: (a) we add sentences which appear in the I.C. but not in the historian’s account; (b) we eliminate sentences which appear in the historian’s account but not in the I.C.; (c) we interchange the positions of all remaining sentences in the historian’s account to conform to the position of the corresponding sentences in the I.C. By repeated applications of these three “rules of rectification” we finally get a corrected version of the original account. It would in fact be an exact duplicate of the appropriate part of the I.C.

I don’t mean to suggest that these are the only problems regarding maps.
This is just the sort of thing a machine could do. Perhaps even the work of the Ideal Chronicler might be given over to a machine. The only place, then, when merely human effort is required is in the construction of an "uncorrected account". This, of course, has to be done through old-fashioned methods, e.g., gathering data, framing hypotheses, making and testing inferences, and the like. And one is never sure of accounts gotten in this pedestrian manner: new evidence may turn up, a fresh hypothesis may be licensed by new scientific developments, whole new interpretations given when a genius appears. Painfully, old accounts are revised and replaced with new ones, and all the work that went into the earlier account has produced something now gone out of date. A thankless, endless business. What a pity it is the historian has not in his own archives a certified copy of the I.C. against which to correct his own account by applying our few simple rules.

Well, let us just give him the I.C.! So now he can know absolutely everything. Yet it is a pernicious gift. For what now is our historian to do? He can go into another "field" of history, but our bounty knows no end: we give him whatever parts of the I.C. he wants. Clearly there no longer seems anything for him to do qua historian, e.g., gather data, frame hypotheses, construct accounts, etc. Why, after all, work hard to make shoddy accounts to be corrected when the correct account is there to be read? To be sure, it may just have been in the use of the old practices that was to be found the historian's raison d'être. Sir Edmund Hillary would doubtless have taken it ill had a great hand reached down from heaven and set him atop Everest like a toy soldier. He would have gotten where he wanted to get, but nobody would recognize this as a great feat in mountaineering — not even if Sir Edmund had prayed for something like this to happen. For praying is not an exercise of the mountaineer's skill. I say: too bad for the historian. We shall have to remind him that history is not a sport, that his use of scholarly apparatus has always been a means to an end, namely the discovery of Truth. And this is just what we have given him. What's the difference if his historiographical tools turn out to have been faute de mieux? What more does he want or can he want?

Croce flings a similar challenge at those who see the task of history to describe the Past "the way it really happened". Suppose you have a complete description: what then will you do?¹³ Croce says: "Act!" I take this to mean: the historian must make some more history before he can write some history, a distressingly sisyphian labor, something like a compulsive housekeeper who must keep scattering dirt in order to go on fulfilling her essence. But I want to take this challenge to heart. What will be left for historians to do? They can, of course, just be suspicious of the boon. Let them test it, then. It will always come out right if their methods are sound. Or they may take refuge in a kind of skepticism, but this will be just as damaging.

to ordinary historical practice as it would be to the I.C. Or they can ignore it. But is the historian to be like some Galahad who, turning the Grail about sadly in his hands, realizes that what he wanted after all was to just go on questing for it? There would be no point in this: further searching must henceforth be tainted with bad faith. The fly is in the fly bottle! The task of the philosopher is to help it out.

My suggestion is: let him use the I.C. as he would any eye-witness account of an event in which he was interested. For it will not tell him everything he wants to know about the event. This sounds as if it contradicts what we have said. Is not the I.C. definitively complete? And haven't I said that nothing can happen to the Past to render it wrong or partial in any respect? Of course it is complete — but complete in the way in which a witness might describe it, even an Ideal Witness, capable of seeing all at once everything which happens, as it happens, the way it happens. *But this is not enough.* For there is a class of descriptions of any event under which the event cannot be witnessed, and these descriptions are necessarily and systematically excluded from the I.C. The whole truth concerning an event can only be known after, and sometimes only long after the event itself has taken place. And this part of the story historians alone can tell. It is not something which even the best sort of witness can know. What we deliberately neglected to equip the Ideal Chronicler with was knowledge of the future.

Yeats, describing in his poem the rape by Zeus of Leda, writes: "A shudder in the loins engenders there / The broken wall, the burning roof and tower / And Agamemnon dead." Waiving for the moment questions regarding the historicity of this episode, the sentence itself is of a kind which could not appear in the I.C. even if the event happened — in contrast with "He holds her helpless breast upon his breast" which conceivably could appear there. For the latter describes what could be witnessed. But nobody could witness the act under the description "Zeus engenders the death of Agamemnon". For that king is now but a youth, and much will happen before his tragic end, as we now know. The death of Agamemnon may be witnessed, only much later. And then someone might trace it all back to the violation of Leda; could see, in historical retrospect, that action of Zeus's as laden with a kind of destiny. To all of this the Ideal Witness is blind. Without referring to the future, without going beyond what can be said of what happens, the way it happens, he could not even write, in 1618, "The Thirty Years War begins now" — if that war was so called because of it duration.

The class of descriptions I am concerned with refer to two distinct and time-separated events, E-1 and E-2. And they *describe* the earliest of the

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14 In her book, *Intention* (Oxford, 1957), G. E. M. Anscombe points out that there are many descriptions of an action, only under some of which is an action intentional. I think this a considerable insight, and I want to acknowledge that my own thoughts here were directly stimulated by Miss Anscombe's book.
events referred to. Yeats’s sentence refers to the rape of Leda and to the death of Agamemnon, but it describes the raping of Leda. “The Thirty Years War began in 1618” refers to the beginning and to the end of the war, but it is about the beginning of the war. On the assumption that the war was so-called because of its length, nobody could presumably describe it in 1618 – or at any time before 1648 – as the “Thirty Years War”. Of course someone might predict that the war would last just that long, and put sufficient confidence in his prediction actually to describe the war that way. But he would be making a claim on the future, which is what we are not allowing the I.C. to do. If we describe an event $E$-1 by making reference to a future event $E$-2 before $E$-2 occurs or is supposed to occur, we will have to withdraw the description, or reckon it false, if $E$-2 fails to happen. But the I.C. is so constructed as not to be mistaken at any point. There are to be no erasures. What it describes is fixed, and it says nothing which is not true. I shall later have more to say about predictions and descriptions, and I shall want, moreover, to explore some of the consequences of allowing the I.C. to make claims on the future. As matters now stand, however, it can make no such claims, and cannot, accordingly, employ the sorts of sentences – hereafter to be designated narrative sentences – I have just characterized. In this case there are no beginning and endings in the I.C. “If there are no beginnings and endings”, wrote Virginia Woolf in The Waves, “there are no stories.” “Cut away the future”, wrote Whitehead, “and the present collapses, emptied of its proper content.”\footnote{Alfred North Whitehead, Adventures of Ideas (New York, 1933), 246.} It begins to dawn on one that a “full description” does not adequately meet the needs of historians, and so fails to stand as the ideal to which we hope to have our own accounts approach. And that not being witness to the event is not so bad a thing if our interests are historical – which shows, I suppose, that some of the arguments of historical relativism are inappropriate.\footnote{See Mandelbaum, op. cit., chs. I and IV.}

III

Factually false sentences may be converted into truths in two ways, provided the meanings of the words used remain constant: we may correct the sentences or rectify the facts they mean to describe. If there are three chairs in the room and someone says falsely “There are four chairs in the room”, he may achieve a true description by adding a chair or by striking out “four” and replacing it with “three”. With regard to false sentences about the past, however, I have only the option of correcting the sentences if truth be my aim. For some centuries there has been no opportunity so to morally re-educate the Borgias as to make “The Borgias were virtuous folk” come out
true. At best I can replace "virtuous" with "wicked" or, if committed to the sentence, I can try to get the meaning of "virtuous" changed – a self-defeating enterprise if I am committed to the proposition that the Borgias were virtuous. "You can't make the Borgias virtuous" changes its meaning radically after 1503: before that time it might mean only that the Borgias were invincibly malfeasant, after that time that the appropriate Borgias, and the events in their lives, were totally embedded in the Past. Suppose, however, that there was a time-machine: our program then might be to return to the Past, work hard on Alexander and his spawn, get them to walk in the ways of righteousness, and return to the present with a sentence made true via rectification of the facts. This is of course a hopeless program, not because of the Borgias but because of the unalterability of the Past. But why is the Past unalterable?

One may be tempted to say: because effects cannot temporally precede their causes, so the events of the Past cannot be the effect of causes now or at any future time in operation. Certainly the reason cannot simply be that the events in question are not "here" so that we cannot, so to speak, lay hands on them: for future events are not "here" either, and yet causes now in operation may be expected to have some effect on future events. On the other hand, the sort of situation I am considering differs from this one: a later event, say a coin falling heads, is said to cause an earlier event, say a man saying "Heads".17 For in such a case, when the coin falls heads at t-2, the man has already actually said "Heads" at t-1. But what would count as changing the Past would perhaps be something like this: someone undertakes to change the Borgias at t-2, the Borgias are vicious at t-1, the man succeeds in making them virtuous instead of vicious at t-1. To make the cases parallel, we should have to think of the man saying "Tails" at t-1, the coin falling heads at t-2, and this then causing the man to say "Heads" instead of "Tails" at t-1.

Now if the Past cannot be changed in this manner, it cannot be simply because effects cannot precede their causes. For suppose the historian, interested in the latter-day vindication of the Borgias' reputation, should admit that there is nothing he can do along these lines. Still, he might argue, they can change for all that. For there might be events earlier in the time-scale than the wicked behavior of the Borgias which will still somehow cause the Borgias to mend their ways: it is simply that they have not yet discharged their causal energy, but have lain dormant all these centuries, like a volcano. This is surely an extravagant proposal, but the causes in question obviously precede their proposed effects, so the incapacity of the Past to change can no longer be charged to the temporal assymetry of cause and effect. Moreover, we cannot simply say that the alleged events, earlier in the time-scale than the hoped-for effect, must, just because they are past, be causally in-

operative – for this would immediately entail a general argument against causality: our concept of causality requires action at a temporal distance. Otherwise no time-separated events can be related as cause and effect and we could not, accordingly, expect the future to be in any sense affected by things happening now. Worse, there would still remain the possibility that the events of the Past just spontaneously change, without anything causing them to do so.

But in the end all these difficulties are irrelevant. For what we are ruling out, so far as causality is concerned, is that any cause, earlier or later than an event $E$ can act on $E$ once $E$ is past. For suppose $E$ has occurred at $t\!-\!1$. Then any change in $E$ will have to consist either in adding a property, eliminating a property, or both. Let $F$ be a property to be added: then at $t\!-\!1$ $E$ is both $F$ and not-$F$, which is contradictory by definition. But it would similarly be contradictory if a property $G$ is eliminated: $E$ would then be both $G$ and not-$G$ at $t\!-\!1$. This then takes care even of spontaneous change. But since $E$ is at $t\!-\!1$, no change can take place in $E$ at any other time, say $t\!-\!2$. For then something would have to be happening at $t\!-\!1$ and at $t\!-\!2$ at the same time, in other words, two distinct times would have to be simultaneous. And this again is contradictory.

When it comes to false descriptions of the events of the Past, then, the only means of converting them to truths is “rectification of terms”. On the other hand, there is a sense in which we may speak of the Past as changing, namely that sense in which an event at $t\!-\!1$ acquires new properties not because we (or anything) causally operate on that event, nor because something goes on happening at $t\!-\!1$ after $t\!-\!1$ ceases being present, but because the event at $t\!-\!1$ comes to stand in different relationships to events which occur later. But this in effect means that the description of $E$-at-$t\!-\!1$ may become richer over time without the event itself exhibiting any sort of instability. And it is for this reason that what I have called the “full description” of $E$ at $t\!-\!1$ cannot be definitive.

Suppose that $E\!-\!1$ at $t\!-\!1$ is a necessary condition for $E\!-\!2$ at $t\!-\!2$. Then it immediately follows that $E\!-\!2$ at $t\!-\!2$ is a sufficient condition for $E\!-\!1$ at $t\!-\!1$. A sufficient condition for an event may thus occur later in time than the event. We cannot readily assimilate the concept of cause to the concept of necessary and sufficient conditions unless we are prepared to say that causes may succeed effects. So it is difficult to suppose that $E\!-\!2$ makes $E\!-\!1$

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18 For familiar reasons. By definition, $p$ states a necessary condition for $q$ if $\sim p \Leftrightarrow \sim q$. But this is equivalent to $q \Leftrightarrow p$. And this exactly represents the claim that $q$ is a sufficient condition for $p$. In brief, whenever $p$ is a necessary condition for $q$, $q$ is a sufficient for $p$, and conversely.

19 Though of course the so-called mechanical state of a physical system $s$ determines every other state of $s$ for every value of $t$ – including then all temporally earlier states of $s$. 
happen. But at the very least it permits a description of $E-1$ under which $E-1$ could not have been witnessed and which, accordingly, could not have appeared in the I.C. Now there may be indefinitely many such descriptions: each temporally later sufficient condition for $E-1$ affords a fresh description of that event. And precisely the same considerations apply for temporally later necessary conditions for $E-1$.

Suppose, for example, that a scientist $S$ discovers a theory $T$ at $t-1$. $S$ perhaps doesn't publish $T$. At some later time $t-2$, a different scientist $S'$ independently discovers $T$, which now gets published and taken into the body of accepted scientific theories. Historians of science subsequently find out that $S$ really hit on $T$ before $S'$. This need take away no credit from $S'$, but it allows us to say, not merely that $S$ discovers $T$ at $t-1$, but that $S$ anticipated at $t-1$ the discovery by $S'$ of $T$ at $t-2$. This will indeed be a description of what $S$ did at $t-1$. But it will be a description under which $S$'s behavior could not have been witnessed and it will be an important fact about the event which accordingly fails to get mentioned by the I.C. Meanwhile, the historian who so describes the event will have used a narrative sentence. For it to be true that a man anticipates $T$ at $t-1$, it is logically necessary that $T$ be later set forth, say at $t-2$. There are, however, some complications. We cannot simply say that the discovery by $S'$ of $T$ at $t-2$ was a necessary condition for the anticipation by $S$ of $T$ at $t-1$. We cannot, that is, simply say that had $S'$ not hit upon $T$ at $t-2$, $S$ would not have anticipated $T$ at $t-1$. For after all, some scientist other than $S'$ could have gotten the same theory, or $S'$ himself might have gotten it at a different time than $t-2$. We can only say that for it to be true that $S$ anticipates $T$ at $t-1$, someone, at some time later than $t-1$, must also discover $T$. And obviously "Someone discovers $T$ later than $S$ discovers $T$" is not equivalent to "$S'$ discovers $T$ at $t-2$, and $t-2$ is later than the time at which $S$ discovers $T$." The former is entailed by, but does not entail, the latter.

Nonetheless, a finer description of both events readily enough converts the latter into a necessary emendation of the former. Let $S$ be Aristarchus and $S'$ be Copernicus. Then we might describe what Aristarchus accomplished at some time in 270 B.C. as follows: "Aristarchus anticipated in 270 B.C. the theory which Copernicus published in 1543 A.D." If Copernicus had not published the theory, or had not published it at that time, or if someone other than Copernicus had published the theory at the stated time, this sentence about Aristarchus would be false. Hence, under the appropriate description, something done by Copernicus is a temporally later necessary condition for something done by Aristarchus. It immediately follows that under just this description, what Aristarchus did in 270 B.C. is a sufficient condition for what Copernicus did some seventeen centuries later. It does not follow, of course, that what Aristarchus did caused, or figured as part of a cause of, the affirmation of heliocentrism by Copernicus. This would
have to be established independently. In a way, of course, the concept of causality is not so clear as one would wish. What Aristarchus did may in no sense have caused Copernicus to discover the heliocentric theory, but in a very definite sense caused Copernicus to re-discovers the heliocentric theory. It is not that Copernicus here did two distinct things: it was just the same action, seen under two distinct descriptions.

"Being a cause" may indeed be a special case of the sort of characterization of events which narrative description affords. Causes after all cannot be witnessed as causes: Hume pointed this out long ago. To say of E-1 that it caused E-2 is to give a description of E-1 by referring to another event (E-2) which stands as a necessary condition for E-1 — under the appropriate description. If E-2 fails to occur, if it is false that E-2 takes place, then it would follow that “E-1 caused E-2” is in turn false. From this it does not follow that E-1 is a sufficient condition for E-2: we would presumably not want to say in general that every cause of an event is a sufficient condition for that event. Nor again would we want necessarily to say that E-2 is a necessary condition for E-1. What would be proper to say is that the occurrence of E-2 is a necessary condition for E-1 being a cause, or more precisely, a cause of E-2. Briefly, then the occurrence of E-2 is not a necessary condition for the occurrence of E-1; it is only a necessary condition for E-1 being correctly describable as a cause of E-2; and accordingly the I.C. could not say, of E-1 when it occurs, that E-1 is a cause of E-2. Hence “is a cause of” would not be a predicate accessible to the Ideal Chronicler.

Nor, as we have seen, would “anticipates”. But there are many more such. For it to be true that Petrarch opened the Renaissance, it is logically required that the Renaissance take place, though in point of fact the Renaissance might have taken place whether Petrarch opened it or not. Again, for it to be true that Piero da Vinci begat a universal genius, his child (in this case Leonardo) logically had to become a universal genius. Other examples would be: “correctly predicted”, “instigated”, “began”, “preceded”, “gave rise to”, etc. Each of these terms, to be true of an event E-1, logically requires the occurrence of an event temporally later than E-1. And sentences making use of such terms in the obvious way will then be narrative sentences.

In addition to lacking narrative sentences altogether, the I.C. is deprived of certain referring devices, expressions which uniquely designate certain events, persons, places, etc., by making use of relative pronouns — “the place where . . .”, “the person who . . .”, etc. — where the blank is filled with an expression which refers to an event which takes place temporally later than the earliest time at which there is such an individual to refer to. Newton penned his Principia from 1685 until 1687, when it was published. After that date is would be natural to refer to Newton as “the man who wrote Principia Mathematica”. Indeed, from this time forward it would not be unnatural to refer to Newton by means of that expression no matter what
period in Newton’s life we were concerned to speak about. We may for that
matter speak of Woolthorpe as the place where Newton was born or the
place where the author of *Principia* was born. We, but not the I.C., may say
that the author of *Principia* was born at Woolthorpe on Christmas Day,
1642. The sentence “The author of *Principia* is born in Woolthorpe” can-
not appear in the I.C. for Christmas Day, 1642. Only after 1687 could this
sentence, appropriately tensed, appear in historical writings.

The house in Woolthorpe still stands. It is the same house which peasants,
or English yeomen, might have seen in the seventeenth century. It doubtless
looks much the same now as it did then. We may make a pilgrimage there
if we wish. We will see the same house which those yeomen and peasants
saw. But we will see it as the birthspot and early dwelling of one of the
greatest scientists of all ages, the place where Newton made those great
discoveries in the Plague Year of 1665. Because of the importance of these
discoveries, and hence the importance of the man himself, the house at
Woolthorpe has for us a special significance. No one could have felt this
significance in 1642: it was something which only events future to that time
could bestow upon it. It is because of the significance we attach to *those*
events, now of course in the Past, that we are sensitive to the significance of
the stone cottage.20

We can visit the house at Woolthorpe, but we cannot visit it at the *time*
when Newton was born: just to visit the Past would be to change the Past,
and this cannot be. If *per impossibile* we could, if we could witness the
birth of Newton, we would see that event as fraught with a sort of destiny
to which even the most ambitious mother must be blind. A shepherd on a
hill in Greece might have seen a woman ravished by a swan, a monstrous
enough occurrence. But he would not see engendered there the death of
Agamemnon. This is something which could have been “seen” only by
someone who knew what could not have been known at the time. Were we
able to visit the Past we would bring with us our knowledge of the Future
(we would in effect be remembering events which occurred later in time than
what we would be witnessing). We could only witness the Past as “it actually
happened” if we somehow could forget just the sort of information which
which may have motivated us to wish to make temporal journeys in reverse.

“But”, it might be argued, “a clairvoyant might both witness a set of events
as they happened and see them as significant in the light of future events.
We, remembering Einstein’s accomplishments, may have seen the old man
in the light of these. Why might not one who *foresaw* these accomplishments

20 N. R. Hanson would argue that we don’t see the same thing they saw, that even,
say, a contemporary historian of science and his wife who is totally uninterested in the
history of science would not, parity of retinal images notwithstanding, see the same
thing when both view the house. See his Patterns of Discovery (Cambridge, 1959),
esp. ch. 1.
see the young man in the light of these same achievements? Think of the Magi!” Well, perhaps. But we have not yet allowed the Ideal Chronicler precognitive gifts. He only knows what happens, as it happens, the way it happens. Every event is equally significant to him. Or equally insignificant. Which is to say that the category of significance fails to apply. How could it apply since he does not know the future? For it is only in the light of the future that the events he witnesses will take on a measure of historical significance.

IV

If we refuse to allow the I.C. to make any claim on the future, to refer to future events, what language is it going to use to describe what happens, as it happens, the way it happens? I have argued that events cannot be described by the I.C. as causes, nor can it characterize them by means of narrative sentences. Narrative sentences refer to at least two time-separated events, and describe the earlier event. But in a sense this structure is also exhibited by a whole class of sentences normally used to describe actions. Is the I.C. then to be deprived of the entire language of action? I want to pursue this question, for it will help isolate some further features of narrative sentences.

Before the maiden voyage of the ill-starred ship *Andrea Doria*, a series of advertisements were run showing men painting pictures, carving statues, making mosaics, and the like. Under each such picture was printed “This man is building a ship.” The pictures did not show men engaged in the sorts of skills obviously involved in the building of a ship, but we were to understand by this that the *Andrea Doria* was to be no ordinary ship. If we thought of such activities as mosaic-making as part of what would normally be done in the building of a ship, the advertisements would fail to make their point – a picture, e.g., of men laying a keel would not make the point that the ship in question was to be extraordinary. Yet if the expression “building a ship” were incapable of being extended to cover such un-normal activities, the advertisements again would fail to communicate their message: we would be puzzled indeed if, under a picture of a man lying drunk in the gutter, it said “This man is building a ship” in a way in which we are not at all puzzled by the pictures we were shown. The predicates of action obey extremely flexible rules: indefinitely many sorts of behavior may be covered with “is building a ship”.

*Literally* speaking, a man may just be putting a seed in a hole when we describe him as “planting roses”, or simply turning screws when we describe his as “repairing the radio”. Yet no one expects such literal descriptions. We would no more think of correcting the description “planting roses” by the more literal “putting seeds in holes” than we would think of accusing a
man of falsehood when he answers "What are you doing?" with "Planting roses" because what he is literally doing is answering our question. The range of behavior covered by "is planting roses" includes digging, fertilizing, sowing, even purchasing shovels and seeds, even reading seed catalogues or hiring expert gardeners. Indeed it is the rare case where the action-predicate is literally applicable, e.g., where a man is actually putting rose plants in the ground. The presence of roses is the result which all these separate pieces of behavior are meant to lead to; and because we see some connection between them and such a result, we tend to describe these different pieces of behavior in terms of the result. Let R be any result, and let B be any behavior engaged in so as to bring about R. Then what a man is doing may either be described with B or R. Then "a is R-ing" will be a correct description of what a is doing if a does B and B is a means to R. But in fact "is R-ing" will generally cover a whole range of different pieces of behavior B1 . . . Bn, so that when it is true that a is R-ing, we may provisionally suppose that a Bi's, where Bi is a member of the range and where "Bi's" is a literal description of what a does. The range marked out by a predicate like "is R-ing" is almost certain to be very flexible, and of whomever it is true that he is R-ing it will generally be true that he will do different things in the range. Or it may be the case that "is R-ing" is indifferently applicable to a group of individuals each doing one of the things in the range, e.g., in a mass-production factory. I shall term predicates like "is R-ing" project verbs.

Now suppose a does Bi at t-1, and we describe his action with the appropriate project verb, "a is R-ing". Is this not to be describing his behavior in the light of some future occurrence, namely the coming about of R? And does the sentence then not refer to two time-separated events, namely Bi at t-1 and R at t-2? But this would then seem to qualify all sentences which use project verbs in the way I have indicated as narrative sentences. Yet if we allow this, and if narrative sentences are ruled out for the I.C., it would follow that the I.C. could not use project verbs, and the problem of how it would describe actions becomes intense. If, on the other hand, we permit use of project verbs by the I.C., are we not then allowing it to make claims on the future? In which case why draw the line at all? Or, if we decide that sentences employing project verbs are not narrative sentences, what further characterization of narrative sentences must we give in order to bring out the difference? Let me take these queries up singly.

Suppose the I.C. were restricted to using only predicates of the sort which can appear in the range. B1 . . . Bn when ordinarily we would use project verbs. Then if we construe the relationship between terms in the range and project verbs on the analogy with the relationship between phenomenal predicates and physical object terms, no difficulty need arise, at least in principle. For then a project-verb would be eliminable in favor of a set of range-terms, and the I.C. would merely present a more detailed description
of what people did than the use of project verbs affords. And such detailed accounts would be wholly consonant with what we expect of the I.C. We, in reading the I.C., if we were equipped with the appropriate rules of translations, could always replace a series of such descriptions with a single description using a project verb. Unfortunately, the problem of describing actions is even more complex than we have so far made it out to be. To begin with, it may be the case that a project verb is true of a man at a time when no term from the range $B_1 \ldots B_n$ is true of him. For a project verb may be true of a man during an indefinitely long period without his having, at every moment during that period, to be doing one or another of the things included in the corresponding range. We may speak of Jones writing a book all during the year. During that time Jones amongst other things sleeps. Yet the fact that he sleeps during that time does not falsify the claim that he is writing a book. Moreover, suppose a man does $B_i$ and $B_i$ is in a range marked out by “is $R$-ing”. Still, it would not immediately follow that he is $R$-ing. Thus Jones may be digging holes, and though digging holes is part of what a man of whom “planting roses” is true does, we could not infallibly infer that Jones is planting roses: he may be planting lilacs or just digging holes. But again, suppose Jones in temporal succession puts a seed in a hole, scratches his head, strikes a match, blows a smoke ring, thinks of his wife, and shifts his foot. Asked at any moment during the stretch of time which all of this takes what he is doing, Jones correctly will answer “Planting roses”. But only the first item in the series belongs in the range marked off by this project verb. In an important sense, then, reading the I.C. for this interval of Jones’s morning will give no real notion of what Jones was doing unless we were able to collect from the series just those pieces of behavior which, so to speak, belong together as part of the single project of rose-planting.

There is a kind of ambiguity in the word “doing”. In one sense, if we knew all of a man’s behavior during a certain interval, we would know everything he was doing. In another sense, however, we should have only the raw materials for knowing what he was doing. In the one sense, the I.C. tells us everything we want to know, in another sense it doesn’t. Not to have the use of project verbs is to lack the linguistic wherewithal for organizing the various statements of the I.C., but more importantly, for the I.C. to lack the use of project words is to render it incapable of describing what men are doing — and so disqualifies it from setting down whatever happens, as it happens, the way it happens.

Yet, if we do permit use of project verbs to the Ideal Chronicler, so that it can give a humanly coherent account of what goes on, have we not then violated our restriction against his making claims on the future? If the I.C. is to be allowed to say that Jones is planting roses, when he is only putting a shovel over his shoulders while setting off for the rose-fields, why can it not say that Mrs. Newton is giving birth to the author of *Principia* when she
has literally only been producing an infant with a weak neck? It would strike anyone as odd were he to be told that a universal genius had been born next door, though it would strike nobody as odd were he told that a rose had been planted next door – even though the rose could not be seen for some months. I venture to say that the difference lies in the sort of claim on the future which is made, and shall try now to make this clear.

When is a sentence like “a is planting roses” ever falsified? The question is exceedingly complex, due, amongst other things, to the indefiniteness of the range of things marked out by the project verb and to complications in the concept of intention. If we see a person just standing still, we cannot surely say that “is planting roses” is false of him, even though he is at that moment engaged in no obvious activity at all: simply resting in the course of carrying out his project. Nor, if we ask him what he is doing and he sincerely replies “planting lilacs” does this falsify the proposition that he is planting roses, for even though he is not intending to be planting roses, he is in fact doing just that, having mistakenly assumed that the seeds were lilac when in fact they were rose seeds. If lilacs rather than roses come forth, this will perhaps falsify the proposition that he was planting roses, provided we are certain that no one surreptitiously replaced his rose seeds with lilac seeds. But if roses fail to come forth, this does not falsify our proposition, so long as he did whatever might, by current criteria of rosiculture, count as planting roses. So let us assume that there is a definite range of operations, the doing of which constitutes planting roses. And let us suppose further that these operations constitute necessary conditions for the coming forth of roses (forgetting about wild roses). If this were the case, then failure to do these things would not merely guarantee the non-coming-forth of roses (“these things” being necessary conditions for that) but would also falsify the claim that the person was planting roses. On the other hand, since the operations are merely necessary conditions, should a do all of them there would be no guarantee that roses would come forth – a hurricane might come up and undo all a’s labors – but it would be true that a was planting roses.

So it can be the case that, while true that a is planting roses, it will be false that roses come forth. More generally, if “is R-ing” is any project verb, it may be the case that a man is R-ing without it having to be the case that R – where R is the accepted outcome of R-ing. A man then may correctly be said to be repairing the radio – though the radio fails to get repaired – providing only that by common criteria the man is doing the things which fall within the admittedly elastic range marked out by “repairing the radio”. Hence, though a sentence which asserts a project verb of someone may indeed refer to two time-separated events – B, which the man literally does, and R, which is expected result – and describes the earlier event in the light of the later one, it is not logically required that the later event take place for the sentence to be true. So, when we correctly say that a is R-ing, the
reference made to the future does not enter as part of the truth conditions for the sentence. Accordingly, the I.C. might be allowed to say that a is \textit{R-ing} without making the kind of claim on the future which would require an erasure in case \textit{R} fails to result.

Now Jones, sowing rose seeds, is planting roses come what may. It may turn out that he has planted roses which come forth and win prizes at the rose festival. This would allow the \textit{narrative} description, covering exactly the same actions that "Jones is planting roses" once covered, that Jones was planting prize-winning roses. Two witnesses to Jones's actions might say, respectively, "Jones is planting roses" and "Jones is planting prize-winning roses". The first will be right no matter what the future brings. The second will be wrong if the future brings no prizes to Jones roses, or if indeed no roses of Jones's come forth. Except the second man be merely expressing his hopes or saying encouraging things to Jones, his sentence is exposed to more exacting truth conditions than is the first man's. For his sentence to be true it is \textit{logically} required that Jones's work results in roses, and the roses result in prizes. In this sense, he is making a stronger claim on the future than the simple "Jones is planting roses" does.

In the past tense, "Jones was planting the prize winning roses" does, and "Jones was planting roses" does \textit{not}, require, for its truth, the resultant coming forth of roses. A narrative sentence then does not merely refer to two time-separated events and describe the earlier with reference to the later. It in addition logically requires, if it is to be true, the occurrence of \textit{both} events. In the present tense, "Jones is planting roses" is not, while "Jones is planting the prize-winning roses" is, partially predictive. As a prediction, it will have been false if no roses come forth (and if they fail to win prizes). Were the I.C. then to have said "Jones is planting the prize-winning roses", an erasure would be called for unless the later event come out. To guarantee no erasures, we must either prohibit use of narrative sentences in the present tense, or grant special cognitive powers to the Ideal Chronicler. Before considering that alternative in Part VI, I want to introduce some further complications.

V

I have claimed that a project verb may be true of an individual through an extended spell of time without the individual needing to be doing, at every

\footnote{Of course, if Bi is admitted into the range B1 \ldots Bn marked out by 'is R-ing', this is doubtless because of some strong evidence that Bi in general leads to R, or that failure to Bi leads to failure of R. Indeed, if one may speculate on the history of language, it may very well be that project-words get applied to various actions in this way. But once the convention is part of common usage, ascription of Bi does not entail the prediction that R.}
moment during that time, one or another of the specific actions in the range marked out by that project verb. This follows from the fact that more than one project-verb may be true of an individual during the same temporal stretch: a may be writing a book and courting a widow all during June. Suppose we are interested not in a's total biography, but merely in the history of his book. Then we shall require some criteria for picking out all and only those performances of a's which are exercises of his authorship or which are related in some manner or other to these. Which events in a's life we shall thus collect will depend very much on our criteria for what counts as writing books: the extent of our collection will vary with the stringency of our criteria. Moreover, a is almost certain to be engaged with other projects during that time, so there will be gaps between the events our criteria enable us to collect. The events we do collect will constitute a gerrymandered subset of whatever a does during the time covered. "R-ing" is continuously true of a so long as R-ing is his project, but a R's but intermittently through that time.

Inasmuch as we have adopted the convention of regarding events as extended in time, projects are time-extended events. But given the checkered history of typical projects, we may classify events as continuous and discontinuous, roughly on the analogy of the distinction between smooth and dotted lines. A dotted line is a series of smooth lines with separating interstices, and a discontinuous event may then be characterized as a series of continuous events separated by irrelevant happenstance. True, on a microscopic inspection what looks smooth to the naked eye will be shown up as riddled with breaks. So in the end the difference may be one of degree only, and I have no wish to argue, by transcendental deduction, so to speak, that there must be ultimate smooth lines. No more do I wish to argue that there must be continuous events if we set our temporal termini sufficiently close. Indeed it is much more to my point that there should be discontinuous events in the sense illustrated by the history of a's book. The difference I mean to bring out is essentially that of a project and the serial events which count as in the range of actions marked out by the use of the appropriate project word. Briefly, if Bi and Bj are in the range of "R-ing", then if Bi is done at t-1 and Bj is done at t-1 plus delta-t, and if nothing is done in the interval between Bi and Bj which is in the range of "R-ing", R-ing will be discontinuous and each of Bi and Bj will be continuous relative to R-ing. Events discontinuous in this sense I shall designate as temporal structures.

Now such projects as writing books and courting widows are amongst the simpler sorts of temporal structures. Some projects, for example, involve numbers of individuals. With some violence to ordinary usage, we may speak of innumerable Frenchmen as engaged in French-revolutionizing during an interval of time in the neighbourhood of 1789. The makeshift project verb "is French-revolutionizing" is not, of course, true of every individual
in France during that interval, and is true of some individuals not in France. Nor, of those of whom it is true, were each of them at every moment during that interval French-revolutionizing. So not everything which went on in France is within the range marked out by our project-word: the project was exhibited then discontinuously over roughly French soil and eighteenth-century time. Just which happenings there and then are to be counted part of the temporal structure denoted by “The French Revolution” depends very much on our criteria of relevance. Doubtless there are shared criteria so that no disagreement exists with regard to certain events. But insofar as there is disagreement over criteria, the disputants will collect different events and chart the temporal structure differently. And obviously our criteria will be modified in the light of new sociological and psychological insights. The Past doesn’t change, perhaps, but our manner of organizing it does. To return to our map-making metaphor of Section II: there is a sense in which the territories (read: temporal structures) which historians endeavor to map do change. They change as our criteria change. And at the very best our criteria are apt to be hospitable, as we saw when speaking of ship-building.

Any term which can sensibly be taken as a value for $x$ in the expression “the history of $x$” designates a temporal structure. Our criteria for identifying $a$, if $a$ be a value of $x$, determine which events are to be mentioned in our history. Not to have a criterion for picking out some happenings as relevant and others as irrelevant is simply not be in a position to write history at all. Temporal structures are, of course, ad hoc in some degree. The identical event may indeed be a constituent in any number of different temporal structures: $E$ may be collected with any number of otherwise disjoint collections of events into distinct temporal wholes. And our description of $E$ may accordingly vary as we group it with different collections of events into different temporal structures. Thus to describe $E$ with a narrative sentence – to relate it to some later event $E'$ – is to locate both $E$ and $E'$ in the same temporal structure. But no a priori limit may be set to the number of different narrative sentences, each of which truly describes $E$. And hence no limit may be set the number of different temporal structures within which historical organization of the Past will locate $E$.

 Nonetheless, just as different contexts will determine which of the innumerable possible descriptions of an object is the appropriate description to give, so the particular temporal structure in which an historian is interested will often determine which is the ‘correct’ description of a given event. I have contended that a particular thing or occurrence acquires historical significance in virtue of its relations to some other thing or occurrence in which we happen to have some special interest, or to which we attach some

22 This is argued in detail in my “Mere Chronicle and History Proper”, Journal of Philosophy, L (1953), 173-182.
importance, for whatever reason. Narrative sentences then are frequently used to justify the mention, in a narrative, of some thing or event whose significance might otherwise escape a reader. A novelist, for instance, may interrupt his story in order to comment narratively on some happening to which he wants to draw our attention, e.g., “Little did Smith know that his innocent sally was to cause the Bishop’s death.” He thus refers ahead to that particular episode from which the earlier and otherwise trivial-seeming event derives its import. And historians often use such devices. Why, in a history of the Crimean War, single out Captain Nolan for special mention when so many soldiers are not spoken of? Because, when Captain Nolan joined Lord Raglan’s staff, “It was a fatal moment.”23 “This officer, brave, brilliant, devoted, was destined to be the instrument which sent the Light Brigade to its doom.”24

Words like “fatal”, “destined”, “doom”, dramatize what is an essential fact about the historical organization of the Past. The Charge of the Light Brigade was a piece of idiotic splendour that impressed the minds of men: it was a fit subject even for poetic treatment. Had it never taken place, or had it been routine or inglorious, the light of historical interest might never have fallen on Captain Nolan, or illuminated him differently, e.g., in connection with some other temporal structure, say the history of cavalry.

Examples of such retroactive re-alignment of the Past might be multiplied

24 Ibid. It is only necessary to pick a history book at random to find examples of this manner of speaking. Thus: “At the very moment when it seemed that the Papacy should have concentrated all its forces to resist its enemies, it flung itself into the crisis which is known as the Great Schism, and which for forty years was to rend Western Christiandom in twain.” Henri Pirenne, History of Europe (New York, 1956), II, 122. “A disagreeable incident occurred as Erasmus was leaving English soil in January 1500... Yet this mishap had its great advantage for the world, and for Erasmus too, after all. To it the world owes the Adagia; and he the fame, which began with this work.” J. Huizinga, Erasmus and the Age of Reformation (New York, 1958), 34-35. “And yet this business, so distasteful in itself, was of supreme importance in world history. This Church, with its collateral sects grown rigid and cut off from all development, was for another millenium and a half to hold nationalities together against the pressure of the barbarians, even to take the place of nationalities, for it was stronger than state or culture, and therefore survived them both. In it alone there persisted the essence of Byzantium.” Jacob Burckhardt, The Age of Constantine the Great (New York, 1954), 302. “[Oresme’s] work was a step towards the invention of analytical geometry and towards the introduction into geometry of the idea of motion which Greek geometry had lacked.” A. C. Crombie, Augustine to Galileo: The History of Science: A.D. 400-1650 (Cambridge, 1953), 261. This last example (and they could be multiplied endlessly) is quoted in an important paper by Joseph T. Clark, “The philosophy of Science and the History of Science”, in Marshall Clagett ed., Critical Problems in the History of Science (Madison, Wisconsin, 1959), 127. All my examples are instances of what Father Clark terms “die von unten bis oben geistesgeschichtliche Methode”, a method particularly susceptible to what he terms “precurritus” (loc. cit., 103 and note 2, 138). Precursitus, if it be a lapse, and the whole Methode characterized by Father Clark, are due to narrative description, a mode of description which goes von später bis früher.
indefinitely. Any novel philosophical insight, for instance, may force a fresh restructuring of the whole history of philosophy: one begins to see earlier philosophers as predecessors – which, ironically, can lead men to understress the originality of him whose novel insight brought to historical attention otherwise unremarked traits of antecedent philosophical utterances. Kant complained bitterly about this.\(^\text{25}\) We have recently seen, as a result of the products of the New York School of abstract expressionism, a comparable re-evaluation of Monet. One might not find that Monet influenced a single member of the New York School: rather, it is because these men began to paint in a special way that Monet became a predecessor in his late works. “If”, wrote Bergson, “there had been no Rousseau, no Chateaubriand, no Vigny, no Victor Hugo, not only would one never perceive, but indeed there would not have been any romanticism in the classics of the past. For

this romanticism of the classicists was only actualized by the carving out of a certain aspect of their work, but this decoupure, with its specific form, no more existed in the literature of classicism before the advent of romanticism than the amusing design exists in a passing cloud before an artist perceives it there in organizing that formless mass according to his fancy.”\(^\text{26}\)

This, of course, is extravagantly put. I should prefer to say that the romantic elements were there, in classicism, to be discovered. But it is a discovery for which we require the concept of romanticism, and criteria for identifying the romantic. A concept of romanticism would naturally not have been available in the heyday of classicism. I want parenthetically to remark that whatever in classicist writings turns out to fall under the concept of romanticism was doubtless put in these works intentionally. But it was not intentional under the description “putting in romantic elements”, for the authors lacked that concept. And this is an important limitation on the use of Verstehen. It was not an intention of Aristarchus to anticipate Copernicus, nor of Petrarch to open the Renaissance. To give such descriptions requires concepts which were only available at a later time. From this it follows that even having access to the minds of the men whose action he describes will not enable the Ideal Chronicler to appreciate the significance of those actions.

To be alive to the historical significance of events as they happen, one will have to know to which later events these will be related, via narrative sentences, by historians of the future. It will then not be enough simply to be able to predict future events. It will be necessary to know which future

\(^{25}\) “Men who never think independently have nevertheless the acuteness to discover everything, after it has once been shown them, in what was said long since, though no one ever saw it there before.” Immanuel Kant, Prolegomena To any Future Metaphysic, para. 3.

\(^{26}\) Henri Bergson, La Pensee et le Mouvant (Paris, 1934), 23. This passage is cited by Mandelbaum, op. cit., 29. I am indebted to Prof. Mandelbaum for especially drawing my attention to Bergson's discussion.
events are relevant, and this requires predicting the interests of future historians. I want now to turn to the matter of predicting events in this manner. But I note in passing that if the Ideal Chronicler is to do this, it will be the works of human historians which will be his models rather than, as we earlier supposed, the other way around.

VI

We cannot identify a sentence $S$ as a prediction simply in virtue of tense, for some sentences may be predictions and yet atypically be in the past tense. Thus "Aristarchus anticipated Copernicus" is predictive at any time after 270 B.C. and before 1543 A.D. Nor is it simply a matter of the user of $S$ intending $S$ to be a prediction. For the user may be confused on dates, and the race whose outcome he tries to predict may already have been run and won by time he utters $S$. I shall stipulate, not a definition of, but only a necessary condition for predictive sentences: $S$ is a prediction when $S$ refers to $E$ and $S$ is uttered temporally earlier than $E$.

A narrative sentence, referring as it does to a time-ordered pair of events $E-1$ and $E-2$, will then be a prediction if used by the Ideal Chronicler. For he will write it down when $E-1$ takes place (narrative sentences being about the earliest of the events they refer to), and so temporally earlier than $E-2$. Moreover, if the I.C. is to remain definitive, these must be correct predictions. But this now modifies the task of the Ideal Chronicler considerably. For since the pair of events referred to by a narrative sentence belong to the same temporal structure, the Ideal Chronicler has to be structuring the Future in the same way that future historians will be structuring the Past. And since the I.C. is to be complete, all narrative sentences true of $E-1$ must be written down at once, and accordingly the Ideal Chronicler must lay out all the temporal structures in which $E-1$ will be located. In effect the I.C. is writing

27 Perhaps this sentence, though grammatically one, breaks up into a conjunction which contains a sentence in the future tense as one conjunct. Thus, it asserts (a) Aristarchus did such and such at $t-1$; (b) Copernicus will do such and such at $t-2$; (c) $t-1$ is earlier than $t-2$; (d) So and so resembles such and such. But (b) shifts tense after 1543, and this confirms the point I make below.

28 This is perhaps moot. Consider the case of lying. A man intends $S$ to be a lie, but the facts do him in: unbeknownst to himself he utters a true sentence. Shall we say he lied anyway, the intention to lie being enough to make of $S$ a lie? Or shall we say that he tried or meant to lie, and failed? I would say the latter. And similarly I would say the man tried and failed to predict. But this may be simply legislation on my part.

29 Even this wants amplification. Suppose $E$ never happens, so that I cannot stand in any temporal relation to $E$: I suggest that there must be some implicit time limitation, e.g., at $t-1$ $E$ is predicted to occur at $t-2$, so the full prediction is "$E$ at $t-2." If $E$ fails to occur at $t-2$, the prediction will be false. But obviously we cannot always make such specifications. I may predict that I will die, but save for special contexts, the date is hidden from me.
of history before it has happened. So if we now allow pieces of the I.C. to fall into the hands of historians, they will find out a great deal more than simply what happened, as it happened, the way it happened. They will also find out what will happen unless the events, whose account they have, are totally unrelated to future happenings. But with this we destroy the asymmetry in our concept of Past and Future: Past and Future now are one in point of determinateness. Indeed, this is analytic. For the truth of $p$ is logically entailed by the truth of “a correctly predicts that $p$”. And every prediction made by the Ideal Chronicler is by definition correct.

So everything is changed. In particular the cognitive powers of the Ideal Chronicler have been changed. Before, though he was privy to a great deal more than a mere human could be, his manner of knowing was simply an extension of a familiar human cognitive situation: he witnessed the events he wrote about. But one cannot now witness future events without changing the meaning of “witnessing”. How then can he know the future? Is the behavior of the Ideal Chronicler any longer even intelligible to us? Let us turn to more strictly human cases in which predictions are made, and work our way gradually back to these questions.

When, at $t-1$, a man predicts $E$ at $t-2$, we may always ask how he knows, or why he thinks, that $E$ at $t-2$. This will generally be by way of request for evidence, and our confidence in the prediction will vary with our assessment of the evidence. Let the prediction be “Rain at $t-2$”. Then evidence may range from rheumatic twinges or mere hunches, to gravid clouds or the behavior of birds, to the outcome of tests with cloud chambers, X-rays, electronic diffraction, and the like. Or it may simply be the weather report in the paper. Whatever the case, that which is cited as evidence is accepted as such only when some answer can be given to the question why it is thought to provide some basis for believing that rain at $t-2$. And the answer may range from a plain inductive generalization to the latest meteorological theory. Briefly, we need for predictions some event and some law-like sentence or other which allows us to infer, from that event, a future happening. Now I am for the moment not interested in whether something is good or bad evidence, but only in the most general requirement that something must satisfy if it is to be evidence at all, namely, that whatever is offered in evidence must be available at the time the prediction is made. And given our characterization of predictions, one thing systematically excluded by this requirement is the event predicted. Any statement to the effect that $E$ will happen, when $E$ has already happened, will automatically be false in virtue of misrepresenting the temporal relationship between the utterance of that statement and $E$. Hence $E$, if offered as evidence for a prediction about itself, will automatically render that prediction false.

At $t-2$, then, we have access to information in principle unavailable to a man who predicted what would happen at $t-2$. Specifically, we are in a
position to know that his prediction was correct or incorrect. Asked how we know that is raining, we can in principle cite evidence which even the most sophisticated forecaster could not have cited earlier: we can point to the rain-fall. Now if narrative sentences refer to two time-separated events, and are predictive until the second event occurs, it would seem that after that event, persons (historians) can always cite evidence in favor of the narrative sentence which would in principle have been unavailable before the occurrence of the temporally latest event referred to by it: they can cite the event itself. And they are then in a position to know, as no one before the occurrence of that event would be, that the narrative sentence is true. Whether it was true before is a question for metaphysical logicians: I am interested here only in the epistemology of the matter.

But if we are really doing epistemology, we have leapt too far. For suppose that at t-1 it is predicted that E-at-t-2. Then indeed someone will, at t-2, have information lacking at t-1, namely the event itself if the prediction turns out to have been correct. Presumably he witnesses E, whereas only signs of E could be witnessed at t-1. But then E can be witnessed only at t-2: at t-3 it is already too late for that, and so on for every t-n (n ≥ 3). From t-3 on we are roughly in the same position as was he who predicted at t-1: like him, we only can witness signs of E-at-t-2. In a sense, we are in a less favored position. For the predictor may at least hope to witness the event he has predicted. But our own argument systematically falsifies "I will witness E" if E occurs temporally earlier than the utterances of this sentence. The predictor is in a position to be in a position of witnessing, and hence knowing whether or not he predicted correctly. But not the retrodictor.

This disadvantage is partially offset by the fact that those who predict the occurrence of E and those who retrodict the occurrence of E may witness disjoint classes of signs of E. Possibly wet streets are not stronger signs that it has rained than gravid clouds are that it will rain. But copies of De Revolutionibus Orbium Caelestium would appear offhand to be stronger signs that somebody wrote the book than any signs I can think of would be that somebody will write it. At any rate, the retrodictor may have the testimony of witnesses to an event, and this sort of evidence is systematically outlawed for he who predicts, given our general restriction. And as a special case we have histories of events after and not before they occur.

Granted that the possibility of someone saying he has witnessed an event, and is now waiting for it to happen, is ruled out by our restriction; granted again that we would simply find absurd the statement by somebody that his book has been published so that he had better get busy and write it; is it similarly to be granted as absurd that someone should claim to have the history of a set of events written, it only now being a matter for the events to happen? Let us try to imagine such a case.

Suppose we pick up a book titled The Battle of Iwo Jima. It describes in
minute detail the men and movements of that conflict: it tells who gets wounded and when, who gets killed and why. And we then discover that the book was written in 1815! For all that, we find that the book tells us more than we already know, even if we are, say, the foremost historical experts on that battle. Using the book as a guide, we look up survivors heretofore unknown to us. Their testimony always squares with this strange, anachronistic windfall, which now becomes an invaluable guide to historical research. Like a treasure map!

After all, a man may draw the treasure map first, and then afterwards place the treasure, or have the treasure placed. A man may lay out a program and afterwards carry it out, or have it carried out. Here are instances of "rectifying the facts". Why then cannot we write a history before the events, about which it is written, actually happen? Someone might argue that we wouldn't call this history, that history by definition is about the past, that it violates usage, accordingly, to say the history of happenings in 1945 can be written in 1815. I am not one to quibble over usage: let it not be called "history." But suppose we only found out after having accepted the book as the definitive account of the Battle of Iwo Jima that it was written in 1815? I should find cold comfort in the fact that we would no longer call it history. It is the possibility of such an account however it be designated that I find disturbing.

A baby in the course of its babbling might, tomorrow perhaps, utter a string of vocables which turn out to be a proof of Fermat's last theorem. Call this a coincidence: one string of vocables may be equiprobable with any other string. Or consider the baby an oracle, and bring in mathematicians to heed its noises. Anything counts as reasonable in such a case. But suppose our problem manuscript is discovered in a bundle of papers, the literary estate of a nineteenth century writer. And there are with it letters. Typical of what these say may be: "I have been hard at work on my book on Iwo Jima. The work goes slowly..." Enough such secondary documentation convinces us that the book is due to deliberate human contrivance. We find passages crossed out and replaced with what turn out to be factually correct emendations, all in that quaint nineteenth century handwriting. Everyone would say: this is a forgery. But if we found amongst Newton's papers a celestial map for the year 1960, and checked and found it wholly accurate, we would not suspect a hoax. We would not feel the unease which comes when a fundamental concept is threatened. Why, though?

Wittgenstein wrote: "The future is hidden from us. But does an astronomer think like this when he calculates an eclipse of the sun?" The question is rhetorical: astronomers apparently don't think that way. The thing is, we know more or less what the astronomer does: he determines

30 See Sect. III.
initial positions, solves equations, etc. Our precocious historian wrote: “The work goes slowly.” But what kind of work? And here we don’t know. We only know that it can be not all like what historians commonly do: search through the archives, authenticate documents, sift testimony, interview survivors, examine photographs, etc. Our inclination now may be to say there can be no writing of history before events because nothing is to count as historiographical apparatus. For the astronomer, the future is no more hidden than the past, and prediction and retrodiction are of a piece. But there is a special asymmetry between the signs and the traces of events, as we have already noticed. Footprints exist after, not before footfalls. Photographs, eyewitness reports, and the like exist after, not before the events they testify to. And it is with such that historiography has to do.

These asymmetries run deep. Seeing gravid clouds I may say “It will rain unless . . .” and seeing wet streets I may say “It rained unless . . .” But the expression which will indifferentily complete either sentence is rare. Thus “a water-truck came by” naturally completes the second sentence, but – shifting tense – “a water-truck comes by” fits ill with the first. But again, “It will rain unless the winds shifts” may be said when gravid clouds are seen, but “It has rained unless the wind shifted” sounds odd when wet surfaces are seen. Moreover, if a man witnesses E at t-2, he is still regarded as a witness at t-3 but, although he will witness the event, he is not regarded a witness at t-1.

Yet, if we use the testimony of a witness as the basis for a retrodiction, we are relying on his memory. Why might there not after all be a symmetry with using some precognitive deliverance from he who will be a witness as the basis for a prediction? Call such a person a “pre-witness”. A pre-witness precognizes that he will witness, the way a witness remembers that he has witnessed an event. Someone might now argue: to say that a is a pre-witness is logically to presuppose that a will witness E. And to say that a will witness E is logically to presuppose that E will occur. But we cannot then accept, as evidence that E will occur, a’s testimony – as a pre-witness – to that effect. For to accept him as a pre-witness is logically to presuppose the very question in issue, namely, the occurrence of E. Unfortunately, an exactly analogous argument would disqualify the evidence of witnesses. For to accept b as a witness of E logically presupposes that b did witness E. And this in turn logically presupposes the occurrence of E. Hence to accept b as a witness, and his testimony as evidence for the occurrence of E is to beg the question in issue. The truth of p is entailed by the truth of “b remembers that p”. But then the truth of p is also entailed by the truth of “a precognizes that p”.

Of course, if we insist on regarding precognition as symmetrical with memory, we would presumably have to rule out precognition as that upon which the “historian” of the Battle of Iwo Jima based his account. For if we cannot remember events we have not witnessed, we cannot precognize
events we won't witness. And he will almost certainly not witness the battle. So the alleged symmetry between memory and precognitions comes to very little. This hardly affects the typical historian, who seldom has personally witnessed the events he writes of: but it is disastrous for the person who writes of events he will not witness.

Perhaps then he has some sort of second sight, and bases his account on prophetic visions. We might explain his emendations on the grounds that a later vision supersedes an earlier one, as in the composition of the Koran. Yet we might ask how he really knows he has this sort of second sight, how he distinguishes between having a proper vision and simply imagining things. It may be that what he meant by “The work goes slowly” was: “Visions are few and far between”. But how should he distinguish his case from that of a novelist with a grudging muse? Note that we can match our strange prophet with an equally strange person who has retroactive visions: a person who writes, in 1960, and on the sole basis of visions, the history of what happened in 1815! Suppose indeed that this person writes in this manner a wholly accurate account. But at least we can check this man’s visions against standard accounts. Even when he reports things not in standard accounts we can know in principle what sort of evidence it would take to verify what he says. But in 1815 there would have been nothing comparable against which the History of the Battle of Iwo Jima could have been checked. Certainly not against other accounts. For the question would then arise how these accounts were arrived at. And if they too were written on the basis of visions, we would only have transferred the problem. A visionary history and an orthodox history might arrive at the same conclusions: there would be orthodox ways of checking both. But when the account is written before the events in question, there are neither orthodox accounts nor orthodox ways of checking unorthodox ones. There may be such visions. But having them is just someone’s huge good luck — like begetting a universal genius. Piero da Vinci’s behavior is instructive: he tried to duplicate the exact circumstances under which Leonardo was conceived in the expectation of duplicating Leonardo. You can say he did just the right thing, or just the wrong thing. It makes no difference. For in the end nothing is right or wrong when it comes to begetting the universal genius. There is no recipe.

But when the astronomer calculates the future eclipse, we don’t suppose him to enjoy special precognitive gifts or to require second sight. When we say the Future is hidden, all we may mean is that we lack the sorts of laws and theories which the astronomer has. Might not the precocious historian have used Science? By “The work goes slowly” we are now to understand that he meant: it is damned hard to determine values for all the variables, damned hard to make those intricate calculations which lead deductively to the conclusions presented in The History of the Battle of Iwo Jima. Well, this may very well be. We have fair reasons for believing that there were no such
theories in 1815. We lack them today. And we cannot then really under-
stand, since we don't ourselves have such theories, what sorts of things
counted as initial and boundary conditions. But lets suppose the man knew
these things, and that his work was "scientific" work. He predicted the
Battle the way the astronomer predicts the eclipse.

Once again, let us work from simple cases. We shall suppose a theory $T$
in accordance with which an event $E$ may be predicted from another event
$C$. Let $T$ be: "Whenever gravid clouds, then rain". The vocabulary of $T$
then consists of two special terms, "gravid clouds" and "rain". Now many
things are true of rain-storms other than their just being rain-storms. Ac-
Accordingly we may readily frame a description $D$ of $E$ which cannot be
formulated in the skimpy lexicon of $T$.

Now $E$ may certainly be predicted by means of $T$, but not under descrip-
tion $D$. In order to be able to do that, we shall have to show that the
predicates of $D$ are explicitly definable with the terms already included in $T$
or – more likely in the present case – we shall have suitably to enrich our
stock of terms. $T$ becomes proportionately more complicated as a conse-
quence of this, and we shall now suppose $T$ to be brought to that level of
complexity currently exhibited by the latest theory of meteorology. Supposing
the vocabulary of $T$ now to consist of a set of terms $F_1, F_2, F_3 \ldots F_n$, we
may say that the description under which $E$ is predicted will ideally use each
of these terms or its negate. This will then be the fullest description current
theory affords.

We all know, of course, that any such description, however rich, is meagre
in contrast with what is logically possible: that every predicate in the language
(or its negate) could apply to $E$, and that even then, since *individuum est
ineffabile*, the properties of $E$ would not be exhausted: the richness of $E$'s
properties outdistances the maximum richness of descriptive power in our
language taken *in toto*. But this does not concern me particularly. For
suppose $E$ has happened, as per the prediction. Then there may be descrip-
tions of $E$ which we find it important to give, but which fall outside the
linguistic reach of $T$. It may not have been just a rainstorm: it may have
been the rainstorm in which our basement was flooded, or which washed
away the wharf that Smith built in 1912. I don't mean to say that these
things could not have been predicted. I only mean to say that they could not
have been predicted by means of $T$ alone. For "floods Jones's basement" or
"washes away Smith's wharf" are almost certainly not terms true of rain-
storms which are included in $T$ or explicitly definable by means of the terms
which are.

It is generally admitted that a scientific theory cannot predict an event
under every true description of that event. Indeed, part of what we think of
as scientific activity consists in finding the appropriate language for de-
scribing events, picking out those terms which designate relevant properties
of events, or making up terms for this purpose. It is quite enough to know the initial position and motion of a body to be able to predict its path: one need not also know that a particular such body is a china egg made for the elder daughter of Czar Nicholas. So it would be pointless and, in the end, inimical to the whole concept of a scientific theory to recommend incorporation into a theory such as $T$ those terms which our own local interest in basements and wharves move us to describe rain-storms with. Moreover, it would be an impossible demand. For there is no end to the number of temporal structures in which the historians of the future might see $E$ as located. It may come to be known as the storm in which Alice and Bernard had their fatal quarrel, or during which the man who proved Fermat's last theorem was born. So it is a sufficient achievement to be able to predict $E$ under some description of it. Science may indeed fail to give us the information about events which we want, but this is because such information cannot always be stated in the abbreviated language of scientific theories. It would destroy the concept of meteorology to make such demands.

So it may. But we are now interested in a different theory, the one used to predict, not just the occurrence of the Battle of Iwo Jima, but that event under the enormously detailed description found in our controversial "history." There must be such sentences in the latter as: "At 3:30, February 20, Sgt. Mallory, while arming a grenade, is killed by Pvt. Kito – the latter's fifth and only successful shot of that day." Small wonder the work went slowly! It would be labor enough merely to write history in such detail. At any rate, the theory used to predict all this must be as linguistically rich as ordinary language. We are supposing after all that the account is readily intelligible to the plain reader.

But then suppose the manuscript had been discovered in, say, 1890. Readers then might have been puzzled by some of the language (as we are often puzzled by some of theirs), but, struck with the fertility of the writer's imagination, they might have assigned it to the same genre with the writings of Jules Verne – though it would perhaps be too wordy, too detailed, for a proper novel. Edited versions, even boys' editions of it would appear. Only after 1945 would people see it as pre-written history. Or, suppose it had been discovered sometime in 1944 and really taken seriously as a piece of scientific prediction. The High Command might discuss it, compare it with their own plans, perhaps even alter their own plans. Sgt. Mallory would see to it that he was elsewhere at 3:30 on February 20th. And then all the work, which went so slowly, would have come to naught: the predictions were false! For men refused to follow the manuscript, behaving like rebellious actors dissatisfied with the script. It is a common enough thing to falsify predictions. Someone predicts that the ball will strike the ground at a certain time, and someone else catches it. Surely it would be to a man's interest to falsify the prediction that he will lose his life at a certain time and place.
The only way for the prediction to go through is for it to be discovered after the event. For we cannot, remember, change the Past.

Maybe that man in 1815 was aware of all this. Maybe he even predicted that the manuscripts would fall into peoples’ hands in 1944, and that they would try to falsify the predictions made in it. And then he predicted what they would do, and wrote all this up! Then the same situation as before would arise if this “fuller” account were to fall into men’s hands in 1944. What we could not understand would be their knowing what prediction was made and not being able to falsify it, so long as the event predicted had not already happened. Imagine having the prediction that one will move one’s left foot at t-1 and one’s right foot at t-2. And one tries to falsify this: one tries just to stand still at t-1, or move one’s right foot. And despite all one’s efforts, the prediction comes out! The feet fall into foreshadowed footprints! As though one had lost all control of one’s limbs, they are now moving off on their own. Or imagine trying not to yell, and then finding despite this a scream tearing past one’s lips. And think of a whole battlefield of men going through this weird alienation. In horror, men find themselves aiming guns: fingers move spontaneously to grenades: pluck pins: men try to shout “Retreat!” but the predicted “Attack!” comes out instead. And everyone watches his own behavior in an almost spectatorial way, detached from every act, knowing in advance what will be done and unable to do anything to prevent its happening. These things happen in nightmares perhaps. Or in the dreams of the Mad Scientist. In dreams it might happen that someone shouts “Stop falling!” and I, in my flight through space, obey – arresting myself in mid-air. “Stop falling!”, in normal contexts, is a paradigm case of an order we cannot obey. “Move your right foot!” in normal contexts is a paradigm case of an order we can disobey if we wish. The elaborate case I have just imagined could only occur if men lost what we normally regard as control over their actions. The one book we cannot imagine the men of Iwo Jima having in their hands is The History of the Battle of Iwo Jima. Or rather: we cannot both imagine their having it and the book remaining true.

What we don’t know, then, is what the historians of the future are going to say about us. If we did, we could falsify their accounts in just the same way that we could falsify predictions made before the time at which we are acting. Or we can do this within the limits of normal human control, a set of limits which we expect science to widen rather than narrow.

So let us now suppose that the Battle was predicted, and the prediction only discovered afterwards. We regard it as a great achievement, and regret only that it was discovered too late. But since is was discovered too late, it is true. Nothing can happen to the Past to make it false. Yet as time passes, we will find it more and more necessary to add fresh descriptions of the Battle of Iwo Jima. A man who was a private then survives, due to the
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heroic action of a man whose dying thought might have been that he had sacrificed himself for so insignificant a person. That private then goes on to do great deeds! The episode takes on a special significance: it is taught to school-children. They enjoy enacting the scene in which was saved the life of the man who . . . And more and more narrative sentences enter later accounts of the Battle: sentences which even the genius of 1815 did not know.

Could the Ideal Chronicler have known? It is up to us to say. He is our creation, we can do with him as we will. It was we, after all, who decided that he should be capable of simultaneously transcribing everything as it happened, when it happened, the way it happened. But why prolong the fiction? It has served our purposes, and may now be abandoned. And with it goes the I.C., of which we failed to find a version which did not either tell us less than we want to, or more than we can know. What about our lame metaphysical model? But what did it serve to do except metaphorically to say that true sentences about the Past are not false – which may be all that “The Past cannot change” comes to. What then about true statements concerning the future? Well, if we can falsify a statement about the future, it simply was not true. If “changing the Future” means only falsifying predictions, then we can surely change the Future. Why then can’t we falsify retrodictions? The answer is we can, after all, in one sense, do that. If I knew that someone would retrodict that I ate a peach at t-1, I could eat an apple instead, and so falsify this retrodiction. But just this is what I do not know. If we knew what the historians of the future would say about us, we could falsify their sentences if we wanted to, just as we can, if we wish, falsify what people before us have predicted that we shall do. Why do we not know the future in this sense? I am not able to say. But does that sentence of Peirce’s, with which we began, mean any more than that we don’t know what the historians of the future will say? “The Future is open” says only that nobody has written the history of the Present.

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