Sooner or Later

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I. Introduction

An event is an alteration; it is, with some qualifications not relevant here, a change from a thing’s having of one property to its having of another, contrary property. Since no thing can have a property and any of its contraries at the same time, no event occurs instantaneously; each event has some interval for its time of occurrence.

An event that occurs during some interval of time also occurs during any period that includes that interval; because of that, unless some event is occurring at all times, no interval is the unique interval of time during which any event occurs. An event’s time of occurrence, that is, the time at which an event occurs, is the shortest interval of time during which it occurs. However, because it is often no simple matter to fix the last moment at which a thing has a certain property or the first moment at which it has a contrary one, an event’s time of occurrence is not always easy to determine.

The questions that concern me in this paper center around the general topic of whether the temporal features of events, however hard they may be to fix, are essential to them. This topic seems to divide very quickly into several. There are many questions, each of whose correct answers would be responsive to some question concerning the essentiality of one of an event’s temporal features. Here is just a partial list; in each case, I shall suppose that some event, e, has some interval, I, as its actual time of occurrence, and that I begins at the instant t₀ and ends at the instant tₑ:

(1) Is it possible for e to have occurred “wholly earlier” (or wholly later) than it actually did? That is, is it possible for e to have occurred at an interval of time, I’, where each instant in I’ is earlier (or later) than every instant in I?
(2) Is it possible for e to have occurred “somewhat earlier” (or somewhat later) than it actually did? That is, is it possible for e to have occurred at an interval of time I’, where I and I’ are overlapping intervals of the same duration, and where I’ begins earlier (or later) than I begins and ends earlier (or later) than I ends?

(3) Is it possible for e to have begun to occur when it actually did, but to have ended at a time earlier (or later) than t_e?

(4) Is it possible for e to have begun to occur later (or earlier) than it actually did, but to have ended when it actually did, at t_e?

Of course, there are questions that are combinations of two or more of those just raised. This is a complicated business.

The issue on which I will focus most of my attention here is part of question (3) above, whether an event, while beginning when it actually did, could have ended sooner than it actually did. That is, suppose that some event began to occur at a time, t_b, and ended at t_e. The central question I will explore, then, is this: Could that very event have begun at the time it in fact did, at t_b, and yet have ended at a time that is earlier than t_e? How this issue is dealt with will, I hope to make clear, have implications for some of the other questions mentioned above, particularly the other part of question (3) and all of question (4).

Some things we say appear to imply that we think the answer to questions of this sort is “yes”. For example, we discuss whether World War II would have ended sooner than it did (though perhaps with a quite different outcome), had Germany invaded England, and whether World War II would have ended later than it did, had the United States not dropped the atomic bomb on Hiroshima.

Such commonly said things do not, however, settle these questions, because the attempt to settle them by such appeals is threatened by scope fallacy. For even if we were to accept such counterfactual claims, the question would still arise as to whether the war that would have occurred, had any of those counterfactual conditions been met, is the very same war that in fact occurred. And it is on the answer to that question that the issue of whether or not an event could have ended sooner (or later) than it did turns.

Since the threat of scope fallacy hangs over our counterfactually expressed intuitions concerning the essentiality of certain features of entities (especially events), it is tempting to think that there simply are no answers to our essentialist questions about those entities. I believe that this easy way out should be resisted. While some philosophical endeavors are directed at shoring up some pre-philosophical point of view we hold, thought perhaps to be embedded in our ordinary ways of talking, not all are like that. We must sometimes rely on what appears, on reflection, to be cogent philosophizing to guide our philosophical opinions.

It should be noted that there may be more than one way in which it might be thought possible for an event to have ended sooner (or later) than it actually did. I
shall chiefly be concerned to explore just one of those ways. However, I shall mention and briefly discuss some others towards the end of this paper, in §IX.

II. Wholly Earlier or Later

Since some of my arguments in the present paper rely on an answer to the question of whether an event could have occurred either wholly earlier or wholly later than it actually did (question (1) above), I should address this question. I shall argue for the "no" answer to it. The argument relies on the following "covariance" principle:

(CV) If possible worlds are alike with respect to the truth and falsity of propositions concerning the existence of changeable objects, the possession and non-possession of properties those objects have (and then lack), and the times at which those objects have (and then lack) those properties, then they must also be alike with respect to the truth and falsity of propositions concerning events.

Now, suppose that, in a world, \( w_1 \), a certain object, \( x \), changes twice in a certain way at distinct, disjoint times, \( t_1 \) and \( t_2 \), of the same duration (where \( t_1 \) is earlier than \( t_2 \); that is, in \( w_1 \), two events, \( e_1 \) and \( e_2 \), occur and each is a change by \( x \) from its having of a certain property \( F \) to its having of a certain contrary property \( G \). \( e_1 \) and \( e_2 \) are "twins" in that all their qualities are the same. They differ, besides differing with respect to their times of occurrence, only in those respects having to do with their relations with other entities. For example, they differ with respect to their causes and effects; but the causes and effects of events are inessential. With respect to their essential properties (apart from the possibility that their times of occurrence are essential) and their non-relational accidental properties, \( e_1 \) and \( e_2 \) are exactly alike.

It seems clearly possible for there to be such events as \( e_1 \) and \( e_2 \); surely a particular ball could twice roll from one place to another in the same way, at the same speed, along the same path, etc. If so, then \( w_1 \) is a possible world.

However, if an event could have occurred at a time wholly disjoint from (that is, either wholly earlier or wholly later than) the time at which it in fact occurred, then \( e_1 \) need not have occurred at \( t_1 \) and \( e_2 \) need not have occurred at \( t_2 \); they could have occurred at different times. And, given the similarity between \( e_1 \) and \( e_2 \) and the similarity between their times of occurrence, it seems clear that, if an event could have occurred at a time either wholly earlier or wholly later than the time at which it in fact occurred, \( e_1 \) and \( e_2 \) could have "switched" temporal places. That is, it could have been the case that \( e_1 \) occurred at \( t_2 \) and \( e_2 \) at \( t_1 \). If so, then there is a possible world, \( w_2 \), in which \( e_1 \) occurs at \( t_2 \) and \( e_2 \) occurs at \( t_1 \).

Now, \( w_1 \) and \( w_2 \) are fundamentally alike; the only serious difference between them is that \( e_1 \) and \( e_2 \) switch temporal places. There will, of course, be further differences between the two worlds necessitated by this switch; but these will all
concern e₁'s bearing in w₂ relations to certain entities that e₂ bore relations to in w₁ (and vice versa).

W₁ and w₂ have the same ontologies; whatever exists in w₁ exists in w₂ as well (and vice versa). And, given the way w₁ and w₂ have been described, each proposition that is not about events is true in w₁ if and only if it is true in w₂. The propositions which express the facts about the properties that objects other than x have at times are the same in w₁ and w₂; and the worlds match with respect to propositions concerning x and its properties at times other than t₁ and t₂ as well as at t₁ and t₂.

Since it is possible for an event to have a twin, w₁ is a possible world. And, w₂ must be distinct from w₁, if an event could have occurred at a time wholly disjoint from the time at which it in fact occurred. For possible worlds are distinct if there are propositions true in one but not true in the other. And, by hypothesis, the proposition that e₁ occurs at t₁ and the proposition that e₂ occurs at t₂ are true in w₁ and false in w₂.

However, if an event could have occurred at a time wholly disjoint from the time at which it in fact occurred, w₂ must be a possible world. But, if (CV) is true, then it can be shown that w₂ is not possible. For if (CV) is true, then, since w₁ and w₂ are alike with respect to the truth and falsity of propositions concerning changeable objects, the properties those objects have and then lack, and the times at which those objects have and then lack those properties, they must also be alike with respect to the truth and falsity of propositions concerning events. Since it is true in w₁ that e₁ occurs at t₁ and e₂ occurs at t₂, this must be true in w₂ as well. However, by hypothesis, it is also true in w₂ that e₁ does not occur at t₁ and e₂ does not occur at t₂. Therefore, w₂ is not a possible world.

But, if an event could have occurred at a time either wholly earlier or wholly later than the time at which it in fact occurred, w₂ must be a possible world. Therefore, no event could have occurred at a time either wholly earlier or wholly later than the time at which it in fact occurred.

Now, it might be objected that all that my argument establishes is not this extravagant essentialist claim, but the more modest one, that events that are twins cannot switch temporal places. However, this objection is mistaken.

The argument does show, by redactio, that events that are twins cannot switch temporal places. But, it is obvious, or so it seems to me, that if events that are twins cannot switch temporal places, then no event can occur either wholly earlier or wholly later than it actually does. Let me explain why I think that this is so.

Surely it is possible for an event to have a twin; this is not, I presume, in question. So, in some possible world, w₁, e₁ occurs at t₁ and its twin, e₂, occurs later, at t₂. Now, if an event can occur either wholly earlier or wholly later than it actually does, then there is a possible world, w₂, in which, though e₂ does not occur, e₁ does occur later than it actually does, say, at t₂. For surely, the occurrence of e₁ is not logically tied in any possible world to the occurrence of e₂, and
if $e_1$ could not have occurred at the time at which $e_2$ occurred, then the essentiality of $e_1$’s time of occurrence is already being granted, since $e_2$’s time of occurrence is quite suitable to $e_1$’s occurrence. Similarly, if the time of occurrence of an event is not essential to it, then there is a possible world, $w_3$, in which, though $e_1$ does not occur, $e_2$ does occur earlier than it actually does, say, at $t_1$.

One who would claim that, though the modest essentialist claim is true, the more extravagant one is false, must be insisting that while $w_1$, $w_2$, and $w_3$ are all possible, a world, $w_4$, in which $e_1$ and $e_2$ both occur but switch temporal places, is not possible. But this seems absurd. Events that are twins are not logically tied to each other. If each event could occur at its twin’s time, when its twin does not occur, then surely it must be possible for the twins to switch temporal places. But, an event can occur at its twin’s time only if it can occur either wholly earlier or wholly later than it actually does.

Therefore, if an event can occur either wholly earlier or wholly later than it actually does, and it is possible for events to have twins, then it is possible for events that have twins to switch temporal places. But, it is clearly possible for events to have twins, and the reductio shows that it is not possible for twin events to switch temporal places. Therefore, it is not possible for an event to occur either wholly earlier or wholly later than it actually does.$^3$

III. Events have temporal parts

The central arguments in this paper involve the idea that events have temporal parts that are themselves events. Though the truth of this assumption seems obvious to me, I suppose that something should be said about it. I shall, therefore, make the following brief remarks.

First, though this cannot be decisive, we do talk as if events had temporal parts that are themselves events. We speak, for example, of the first part of the party at Bill’s house last night, and we attribute to that part of the party properties that are plausibly attributable to events. We say that, though the first part of the party took place outdoors and was noisy, the rest of the party was quieter and took place indoors because it started to rain. We speak also of the last lap of a runner’s race, which seems clearly to be a temporal part of the race, and say of it that it was a faster one than the first.

Secondly, and more importantly, it seems to me that the very idea of an event is the idea of something that has temporal parts. Events, in contrast with physical objects, do not exist (occur) in their entirety at every moment during which they are occurring. Events unfold over time. What occurs at a given moment or stretch of time need not be the whole of an event; an event, while it may be occurring at some particular time, does not occur at any time that does not include every time at which it is occurring.

An event is a change from the having of one to the having of another, contrary property. Often,$^4$ in the course of changing from having F to having K, an object
will “pass through” the having(s) of “intermediate properties”, as an object, in moving from one place to another, will pass through places in between. It would seem quite reasonable to think, in such cases, of the object’s changings from being F to being G, from being G to being H, from being H to being J, and from being J to being K as temporal parts of the object’s change from being F to being K; and each of these sub-changes is itself an event. Further, these temporal parts are events of which the change from being F to being K is (temporally) composed. I am not sure that I would know what to think about events if all this weren’t so.

However, two cautionary points must be made here. The first is that not every temporal part of an event is itself an event. If events have instantaneous temporal parts (for example, an object’s being at place p₂ might be said to be a temporal part of its continuous motion from p₁ to p₃), they are not temporal parts of events that are themselves events. Again, the reason for this, as I see it, is that every event is a change from a thing’s having of one property to its having of another, contrary property; and nothing can have a property and any of its contraries at the same time. So, there are no instantaneous events.

The second cautionary note is that not every temporal part of an event that is itself an event is an event of the same type as the event it is a temporal part of. Not every temporal part of a Φing need itself be a Φing. Though perhaps every event temporal part of a sinking is itself a sinking (so that the sinking of a ship is composed of the sinkings of its parts), not every event part of my dying, for example, is a dying. My spleen does not die, though, if certain other conditions were met, some change in my spleen (its ceasing to function) might be a temporal (and perhaps a spatial) part of my dying.

Now, let us get to the main issue—whether an event could, while beginning at the time it actually did, have ended sooner than it in fact did.

IV. Yes

In this section, I present an argument for the claim that the answer to the question, Could an event, while beginning when it actually did, have ended sooner than it actually did?, is ‘yes’.5

A certain ship, S, which is composed of parts s₁, s₂, ..., and sₙ, sinks (for the first and only time) during the minimal interval of time I, an interval of length t. This sinking of S is composed of the several sinkings of S’s parts. For simplicity’s sake, we may suppose that S sinks one part at a time, so that the sinking of the “first” part of the ship, s₁, occurs at the beginning of I, the sinking of the next part of the ship, s₂, occurs at the “next” interval in I, and so on; further, we may suppose that each of S’s n parts takes exactly the same amount of time to sink (one nth of t).

Not being a mereological essentialist, I hold that S could have had one less part than it actually had; in particular, S could have lacked sₙ, the part that was, in fact, the last to sink. Now, if S had lacked sₙ (suppose that sₙ was destroyed
and not replaced), the sinking of $s_n$ would not have occurred. It seems reasonable to assume, however, that even if $S$ had lacked its last part, the sinkings of $S$'s other parts would still have occurred and that the relations among those parts and among their sinkings would have been unaffected. But then, it seems clear, there would have been an event composed of the sinkings of $s_1$, $s_2$, ..., and $s_{n-1}$. And that event would have occurred at an interval that began when the actual sinking did, but ended $t/n$ seconds before the actual sinking did. But, since those remaining parts, $s_1$, $s_2$, ..., and $s_{n-1}$, would, in the counterfactual situation we are imagining, have been the parts of which $S$ was composed, the sinkings of those parts, in that situation, would have been the events of which the sinking of $S$ was composed. If so, then the sinking of $S$ would have occurred at a time which began at the time it actually did, but would have ended $t/n$ seconds sooner than it actually did.

Therefore, the sinking of $S$ could, while beginning when it in fact did, have ended sooner than it actually did.

V. No

However, there is an argument for the claim that an event could not, while beginning when it in fact did, have ended sooner than it actually did. To prepare the way for this argument, a brief diversion will be necessary.

In “Four-Dimensional Objects”, Peter van Inwagen argues against the view that physical objects have temporal parts. His argument goes something like this.

Suppose that some physical object, $O$, actually began to exist at a time, $t$, and ceased to exist (for the first and only time) at $t'$. If $O$ could have existed for a slightly shorter period of time than it in fact did, it could have gone out of existence (for the first and only time) at a time a bit earlier than $t'$, say, at $t^*$. However, if we suppose that physical objects had temporal parts, then there actually was an object, $O^*$, that actually began to exist at $t$ and ceased to exist at $t^*$. Since $O^*$ is a proper temporal part of $O$, it is not identical with $O$. But, if $O$ had ceased to exist at $t^*$, then, in that counterfactual situation, $O$ and $O^*$ would have had exactly the same spatio-temporal history, and, therefore, would have been identical. But, it cannot be the case that objects that are actually distinct are possibly identical. In the case at hand, however, we are led to the conclusion that an object could have been identical with something with which it was in fact not identical, namely a proper temporal part of itself. And that is impossible.

Now, while there are other assumptions lying behind this reductio that might be called into question, van Inwagen’s argument suggests that what must be given up is either the assumption that physical objects can exist for a shorter period of time than they in fact do or the assumption that physical objects have temporal parts. Since van Inwagen (rightly, in my opinion) thinks it obvious that a physical object can have a shorter lifespan than it actually has, he thinks that the assumption most reasonably given up is the claim that physical objects have temporal parts.
I have recounted van Inwagen’s argument, because the argument that I shall now present against the thesis that an event could have ended sooner than it actually did (while beginning when it actually did), is modeled on it. The argument alleges that, if an event could have ended sooner than it actually did by lacking a final temporal part, then it would have been, per impossibile, identical with a proper part of itself.7 Here is the argument.

Let some event, E, be the motion of some object, x; E begins at a time, t1, and ends at a time, t2. As a matter of fact, this motion of x is a motion, at a constant speed, from a place, p1, to a place, pn, along a path that passes through intermediate points, p2, p3, ..., and pn−1. Although the path of x’s motion from p1 to pn is continuous, the intermediate points I have mentioned are discretely separated from one another and are only some of infinitely many points between p1 and pn through which x passes on its journey.

Again, unlike physical objects, events do, as I urged in §III, have temporal parts. In the case at hand, to each partition of x’s path from p1 to pn into finitely long segments, there corresponds a way to divide E into temporal parts of which it is composed. So, for example, E can be thought of as composed of x’s motion from p1 to p2, x’s motion from p2 to p3, ..., and x’s motion from pn−1 to pn, and each of these “sub-motions” is a proper temporal part of x’s actual motion.

We can also think of E as composed of these two temporal parts: x’s motion from p1 to pn−1 and x’s motion from pn−1 to pn. Now, x’s motion from p1 to pn−1 is also a proper, albeit a larger, temporal part of E, a temporal part which itself can be construed as composed of x’s motion from p1 to p2, x’s motion from p2 to p3, ..., and x’s motion from pn−2 to pn−1. X’s motion from p1 to pn−1, which began at t1 and ended at t∗ (earlier than t2), is a proper temporal part of E and is surely an event; let us call this event “E∗∗”. Since E∗ is a proper temporal part of E, E∗ is not identical with E.

Now, one way in which x’s motion, E, might be thought to be capable of ending sooner than it in fact did (while beginning when it actually did) involves supposing that E lacked one of its “last” temporal parts. So, let us try supposing that E ended sooner than it actually did by dint of lacking the temporal part that is x’s motion from pn−1 to pn, so that x’s motion consisted of just the motions that composed x’s motion from p1 to pn−1. E would then have begun at t1 and ended at t∗. But the motions that composed x’s motion from p1 to pn−1 actually composed E∗. So, in the counterfactual situation we are imagining, in which E, by lacking a final temporal part, ends sooner than it actually did, E is composed in exactly the same way of exactly the same events that composed E∗. In this case, it seems only reasonable to think that, in the counterfactual situation we are trying to imagine, E just is E∗.

But this is impossible, for then x’s actual motion, E, would have been identical with something, namely E∗, that it was in fact not identical with, something that was, in fact, only a proper temporal part of it.

We must thus, as with the analogous choice that had to be made in the face of
van Inwagen’s *reductio*, give up either the assumption that an event could have lacked one of the last temporal parts that in fact (temporally) composed it or the assumption that events have temporal parts. But, as I urged in §III, it is obvious that events have temporal parts that are themselves events. Therefore, we must reject the claim that x’s actual motion, E, which in fact had x’s motion from p₁ to p₂, x’s motion from p₂ to p₃, …, and x’s motion from pₙ₋₁ to pₙ as its temporal parts, could have had x’s motion from p₁ to p₂, x’s motion from p₂ to p₃, …, and x’s motion from pₙ₋₂ to pₙ₋₁ as its temporal parts instead. And so, no event (while beginning when it actually did) could have ended sooner, in that way, than it in fact did.

VI. Adjudicating the Dispute

We now have a pair of arguments whose conclusions contradict each other; so, at least one of these arguments must be unsound. The arguments must be examined in order to see whether one or other of them can withstand some critical scrutiny.

(i) The “Yes” argument. There are several assumptions embodied in the “Yes” argument. Some of them, like the assumption that physical objects, such as ships, have spatial parts and the assumption that at least some of those parts are inessential to the things that have them, are ones that do not specifically concern events; and I propose simply to grant them.⁸

The crucial assumption of the “Yes” argument, it seems to me, is the claim that, in the counterfactual situation in which S is composed of s₁, s₂, …, and sₙ₋₁, the sinkings of those parts are events of which the sinking of S is composed.

Now, this claim is surely true in one sense, a sense in which the term ‘the sinking of S’ has small scope. On the assumption that a complex physical object can survive the loss of a small part, it seems obvious that, in the counterfactual situation described, ship S exists and is composed of s₁, s₂, …, and sₙ₋₁. And, in that situation, there does occur one and only one sinking of S, and that event is indeed composed of the sinkings of s₁, s₂, …, and sₙ₋₁. But from this it does not follow that the sinking of S, the one that actually occurred, could have ended sooner than it actually did. For that to follow it would have to be the case that the sinking of S that occurred in the counterfactual situation is the very same event as the sinking of S that actually occurred. And the “Yes” argument must be assuming that that is so.

But it seems that this assumption is either gratuitous or founded on a scope fallacy. To justify the “Yes” answer, it is not enough to show that some event that could have occurred is such that, had it occurred, it would have been the one and only sinking of S and would (while beginning when it actually did) have ended sooner than the actual sinking of S. It must be shown that it was the actual sinking of S that, in some possible situation, would have ended sooner than it actually did; that is, a modal claim in which ‘the sinking of S’ has large scope must be shown to be true. That there could have occurred an event that was the
sinking of S and that ended earlier than the actual sinking of S did does not imply that the actual sinking of S could have ended earlier than it actually did.

So, while the event composed, in the counterfactual situation, of the sinkings of \( s_1, s_2, \ldots, \) and \( s_{n-1} \) is, in that situation, a sinking of S, and while that event is the one and only sinking of S that occurred in that situation (and thus is the sinking of S that occurred in that situation), it need not be the sinking of S we are interested in, namely the one that actually occurred.

Therefore, the “Yes” argument has not given us any good reason for thinking that the sinking of S that could have occurred is the sinking of S that did occur. And so, a crucial premise of the argument for the claim that an event, while beginning when it actually did, could have ended sooner than it in fact did, has either gone undefined or been improperly defended by an argument that commits a scope fallacy.

(ii) The “No” argument. I think that it can be seen that the “No” argument’s crucial assumption is the following claim: the event \( E^* \), the event that is in fact composed of x’s movings from \( p_1 \) to \( p_2, \ldots, \) and from \( p_{n-2} \) to \( p_{n-1} \) and which is a proper temporal part of \( E \) (x’s actual motion from \( p_1 \) to \( p_n \)) is the very same event as the one that occurs in the counterfactual situation and is, in that situation, composed of x’s movings from \( p_1 \) to \( p_2, \ldots, \) and from \( p_{n-2} \) to \( p_{n-1} \) (even though it is there not a proper temporal part of any event). This assumption is crucial, since, if it is not true, then we will not be able to deduce, for purposes of the reductio, that some particular event is both actually a proper temporal part of another and possibly an improper temporal part of that “other”.

Now, I do think that, while some event, e, is actually composed of a number of events, it is possible for some event distinct from e to be composed of all and only those very same events. But it is, I think, difficult to see why this possibility should be thought to be realized in the case at hand. The crucial assumption of the “No” argument is a claim similar to one supposing that, if some physical object, O, is in fact composed of objects \( O_1 \) and \( O_2 \), then, even if \( O_2 \) were annihilated, \( O_1 \) would still have existed. Thus, I see no good reason for rejecting the claim that \( E^* \), the temporal part of the actual motion of x, E, that is composed of the motions of x from \( p_1 \) to \( p_2, \ldots, \) and from \( p_{n-2} \) to \( p_{n-1} \), is an event that would have occurred had x’s motion from \( p_{n-1} \) to \( p_n \) not occurred. And if that is right, then the crucial assumption of the “No” argument is true.

Of course, it is also crucial to the “No” argument that events have temporal parts that are themselves events and that \( E^* \) is such a temporal part of E. But, again, I think that this is obviously true.

I conclude that the “No” argument is sound, and that, therefore, no event, by dint of lacking a final temporal part, could (while beginning when it actually did) have ended sooner than it actually did.

VII. Starting Later

By imagining a counterfactual situation in which S lacks its “first” part, \( s_1 \), and begins to sink n/t seconds after the beginning of I, we can construct an argument,
analogous to the one in §IV, for the claim that the sinking of S could (while ending when it in fact did) have begun later than it actually did. This argument would constitute a “yes” answer to the first part of question (4).

And an argument, similar to the one in §V, can be constructed for the “no” answer to the question of whether an event, by lacking an initial temporal part, could (while ending when it in fact did) have begun later than it actually did.

And, of course, §VI’s adjudication of the dispute between the “yes” and “no” answers to the question of whether an event could (while ending when it actually did) have ended sooner than it in fact did can be turned into an adjudication of the current dispute between the “yes” and “no” answers to the question of whether an event could (while ending when it actually did) have begun later than it in fact did—with the “no” answer again winning the day.

**VIII. Starting Earlier and Ending later**

One way in which it might be thought that an event could (while ending when it actually did) have started earlier than it in fact did is if it had an additional temporal part that occurred earlier than any of its actual temporal parts. So, suppose that things were actually the way they were described in §IV. What could have happened was that ship S had a part, s₀, added to it, and that, when S sank, it was the sinking of s₀ that was first to occur, followed by the sinking of s₁, and so on.

Similarly, one way in which it might be thought that an event could (while starting when it actually did) have ended later than it in fact did is if it had a temporal part that occurred later than any of its actual temporal parts. So, again suppose that things were actually the way they were described in §IV. What could have happened was that S had a part, sₙ₊₁, added to it, and that, when S sank, it was the sinking of sₙ₊₁ that was last to occur, immediately preceded by the sinking of sₙ, and so on.

But, if the logic of necessity and possibility is such that the accessibility relation among possible worlds is symmetric, then, in light of the previous conclusions, that an event could neither have ended sooner (while beginning when it actually did) nor started later (while ending when it actually did) than it in fact did, by dint of its lacking an earlier or a later temporal part, it can be shown that an event could neither have gone on longer than it did by dint of adding a temporal part to the end nor have begun earlier by adding a temporal part to the beginning.

**IX. Other ways of ending sooner**

If my arguments so far have been sound, we have been unable to consistently imagine either an event’s ending sooner than it did (while beginning when it in fact did) or beginning later than it did (while ending when it actually did) by dint of its final or initial parts’ non-occurrence or an event’s beginning sooner than it did (while ending when it actually did) or ending later than it did (while begin-
ning when it actually did) by dint of its having an additional initial or final part. So far then, the answer to all the question in (3) and (4) of §I appears to be “no”.

But there might be other ways in which an event, say, could (while beginning when it actually did) have ended sooner than it in fact did.

(i) Missing an intermediate part. Instead of imagining an event’s lacking its “final” temporal part, we might try imagining an event’s lacking one (or more) of its “intermediate” temporal parts, or imagining one (or more) of an event’s intermediate temporal part’s ending sooner than it (or they) actually did.

In these cases, in order for the event in question to have ended sooner than it actually did, one or more of the temporal parts that occur after the missing or speeded up part would either have to occur wholly earlier than it actually did or have to end sooner (while beginning when it actually did) than it in fact did.

Now, I have just gotten through arguing that no event could have ended sooner than it actually did (while beginning when it in fact did), in one particular way, and I argued in §II that an event could not have occurred wholly earlier than it actually did. If I am right about these things, then, if an event lacked one (or more) of its intermediate temporal parts or had one (or more) of its intermediate temporal parts end sooner than it actually did, then such an event would have been composed of events at least some of which did not actually compose it.

This would be an impediment to these ways for an event to be capable of ending sooner than it in fact did (while beginning when it actually did), however, only if it is impossible for events to be composed of events other than those of which it is in fact composed. My own inclination, however, is to think that events are, in this respect, very much like physical objects, in that just as I do not think of a physical object’s spatial parts as essential to it, I do not think of an event’s temporal parts as essential to it. More to the point, I think that the sinking of S that would have occurred, had all of S’s original parts been replaced with new ones, could be the very same sinking that S, constructed of those original parts, actually underwent, even if the sinkings of the replacement parts were distinct from the sinkings of the corresponding original parts. If all this is right, it is not, at least in general, the case that it is essential to an event that it be composed of the events that in fact compose it.

But consider the following. Suppose that we try to imagine some event’s ending sooner than it (e) actually did (while beginning when it actually did) by imagining the event to have lacked some intermediate temporal part, e₁.

Again, for such a case to show that e could have ended sooner than it actually did, it would have to be shown that the event that occurs in the imagined situation is the very same event as e. Now, if the event that occurs in the imagined situation is composed of the very same events, but for e₁, that composed e, then it might be argued that the imagined event cannot be identical with the actual event since, if it were, we would, as earlier, have another impossible case of something’s being identical with a proper temporal part of itself.

However, two points stand in the way of this argument. First, if the events that
follow the deleted temporal part of e are, as suggested, different from the events that in fact followed it, then the events that compose the imagined event are not the same ones that compose a temporal part of e. If so, then the imagined event would not be a temporal part of e; and thus the reductio could not get off the ground.

Secondly, it is not at all clear to me that, in the actual situation, there is an event that is composed of all of e’s temporal parts except for e1, and is also a temporal part of e. That is, it is not clear to me that (assuming that there are such events as baseball games) there is an event which is both a temporal part of some particular baseball game and composed of the events that take place in all but the fifth inning of that game. My doubts here concern the possibility of there being a temporal part of an event, when the temporal parts of that temporal part are temporally disjoint. These doubts are similar to doubts that one might have over whether there is a part of my body composed of my liver and my spleen.

(ii) Just happening faster. There is another way in which it might be thought possible for an event to have ended sooner than it actually did (while beginning when it in fact did); and it is, apparently, a lot simpler than any of the ways we have so far been discussing. Suppose that some object, O, in fact moves from one place, p, to another, p’, at a constant velocity, v; O’s making of that trip took, let us suppose, one hour. But surely it is possible for O to have traveled the same path from p to p’ at a constant speed of 2v, so that the trip took only half an hour. So, while the trip that O could have taken would have started when the trip that O actually took started, it would have ended half an hour earlier. The trip could have ended sooner than it actually did just in virtue of its subject’s moving faster.

There are two points to be made about this argument. First, O moved from p to p’ in one hour; so, there was a movement by O from being at place p to being at place p’ and that event took one hour. And it is also clear that O could have moved from p to p’ in half that time. From this is it surely follows that there could have been an event that was a change by O from being at place p to being at place p’ and that took only half an hour. But it does not follow from this that the change from being at p to being at p’ actually undergone by O could have taken only half an hour. That would follow only if the movement from p to p’ by O that could have occurred was the movement from p to p’ by O that actually occurred. But simply to suppose that that is so is to beg the question at issue. That there could have been a movement from p to p’ by O that took only half an hour does not imply, except by committing a scope fallacy, that a movement from p to p’ by O that in fact took a hour could have taken only half an hour.

Secondly, let us suppose that we divide O’s trip into tenths. The event that was the first part of O’s actual trip, its going from p to a point one tenth of the way to p’, took a certain amount of time to occur (six minutes). The event that was the first part of O’s imagined, faster trip, its going from p to a point one tenth of the way to p’, would have begun to occur when the actual first part of O’s trip did and would have ended earlier than the actual first part of the trip did. Now
perhaps it is not yet clear whether this is an impediment to truth of the claim that the first part of O’s actual trip could have been the first part of O’s imagined trip. But it is clear that each of the next nine parts of O’s imagined trip would have occurred wholly earlier than their actual “counterparts”; and that is, I have argued, an impediment to their being identical with their actual counterparts.

Therefore, since the imagined trip would have been composed of temporal parts at least all but one of which were different from those which composed the actual trip, it seems that the kind of arguments involved in §§IV-VI, above, will not apply.

So, despite what is surely true, that a thing can change more rapidly than it in fact does, we have no argument either for or against the claim that an event could (while beginning when it actually did) have ended earlier than it actually did by dint of its subject’s changing more quickly. The argument in favor of that claim seems either to beg the question or to be plagued by a scope fallacy. And the only style of argument that I know of against claims of that sort does not work here.

X. Conclusion

The failure of the arguments in §IX to establish or refute certain essentialist claims leaves one intellectually rather uncomfortable and unsatisfied. We seem to have an argument in favor of the claim (among others) that an event cannot, in a certain way, have ended sooner than it in fact did (while beginning when it actually did). But we have no argument either for or against that claim in certain other cases. Could it turn out that an event could not have ended sooner than it actually did (while beginning when it actually did) by dint of lacking a final temporal part, but could have ended sooner than it actually did (while beginning when it actually did) by dint of lacking intermediate temporal parts or by dint of its subject’s changing faster than it actually did? That this should be so, if it is so, should strike one as odd, and if it is so, we should be provided with an explanation, particularly of why the difference between terminal and non-terminal parts makes such a difference.

I am inclined to think that such an explanation is not forthcoming. What really should be the case, I think, is that all the temporal features of events concerning length of occurrence should be essential; and I shall try to indicate what my “reason” is for thinking so by musing briefly about the contrasting attitudes we might have about spatial and temporal parts.

van Inwagen has said that, if physical objects had temporal parts, those parts would be modally “inductile” and “incompressible”; no 24-hour part, were there such a thing, of me could either have been extended for an extra three hours or have lasted for only twenty hours. Why should this be so?11

There is the following argument that might be offered: it is not possible for a 24-hour part of me to have been a 20-hour part of me, therefore, a 24-hour part of me cannot have been a 20-hour part of me. But this argument clearly commits a scope fallacy.12 So what reason is there for thinking of temporal parts as modally incompressible and inductile along the temporal dimension?
Consider, for a moment, the spatial parts of physical objects; it seems that we do not think of them as modally inductile or incompressible along the spatial dimensions. Suppose that one of the legs of a certain table is a legitimate spatial part of that table. It seems clearly true that we think that that leg, that spatial part of the table, could have been larger or smaller or taller or shorter than it actually was.

But now, consider, assuming for a moment that there are such things, some apparently “arbitrary” spatial part of the table, one which is defined or identified solely in terms of its spatial boundaries; for example, the two square inch piece of the table top in the center. This is an object whose spatial boundaries do seem essential and which is modally inductile and incompressible along the spatial dimensions; and the reason for this seems precisely that it is, so to speak, defined as a thing having a certain size.\textsuperscript{13}

Consider, now, a ruler made of taffy, and suppose that one part of it, its leftmost part, is one inch long. If, indeed, we think that the ruler has such a part, it surely seems to be the case that that very part, by being stretched, could have been longer than one inch. But, it is unclear what precisely we are referring to when we speak of the one-inch-long leftmost part of the ruler. It is clear that, if detached, the taffy-ish matter that currently makes up the leftmost one inch of the ruler could be so stretched as to be the matter of a thing that was longer than one inch. But it is not at all clear to me that the one-inch-long leftmost part of the ruler could be so stretched as to be more than one inch long.

If this is right, then it seems that the “real” spatial parts of things are not modally inductile or incompressible along the spatial dimension. But, the arbitrary spatial parts of things, if there were any, which are defined and identified by their spatial boundaries, would be.

Now, if physical objects had temporal parts, those parts would, I think, be “arbitrary” in the required sense; if they existed at all, they would be things which are identified and defined by their temporal boundaries (e.g., Descartes-when-he-was-in-Sweden). And, being so defined, they would possess their temporal boundaries essentially. And it is for that reason, I suspect, that Temporal Parts Theorists should (falsely) insist that Descartes, who, according to such philosophers, is an improper temporal part of himself, could not have had a longer or shorter lifespan than he actually had.

Now, the temporal parts of events. Each event, occurring as it does over an interval of time, has temporal parts that are themselves events. Indeed, every event is a temporal part, for every event is either a proper temporal part of some other, longer event, or an improper temporal part of itself. Moreover every partition of an event’s time of occurrence into finitely long segments will be occupied by an event that is a temporal part of that event. And for events which are such that, whenever its subject goes from having one to have another, contrary property, there is another, contrary property its subject has in between,\textsuperscript{14} how such an event’s time of occurrence is partitioned is arbitrary. Thus, the temporal parts of events are, in a way, temporally arbitrary; the events that occur
at those partitioned intervals seem to be defined and identified by their temporal boundaries. If this is right, then these temporal parts should be modally "inductile" and "incompressible" along the temporal dimension. And if so, then, since every event is a temporal part, the temporal features of events concerning length of occurrence should be modally fixed.

Of course, these speculations of mine have not been supported by any detailed, independent argumentation. Indeed, I have not even argued that an event cannot have had, by lacking a final temporal part, a shorter time of occurrence than it actually did. All I argued, in §IV, was that an event cannot, by lacking a final temporal part, have had a shorter time of occurrence while beginning when it actually did. So, my argument there did not go very far at all in backing up this speculation.

Thus, apart from my musings concerning the modal inductibility and incompressibility of temporal parts and their contrast with spatial parts, I have, at this time, no detailed, deep, and convincing argument to back up my speculation that the temporal features concerning the length of occurrence of events are essential. There is much more work to be done on this topic. This is a complicated business.15

Notes


2For an argument for the claim that the causes and effects of events are inessential to the events that have them, see ibid., pp. 190–197.

3It seems that we can generate, from what has just been said, an argument for a negative answer to the questions in (2) of §I. Suppose that an event could have occurred somewhat earlier (or later) than it actually did; and suppose that the accessibility relation among possible worlds is transitive. Then we generate a series of worlds in which a certain event, e, occurs somewhat earlier (or later) than it did in the immediately preceding world. Thus, we eventually come to a world in which e occurs at a time wholly earlier (or later) than it actually did. But, as just argued, this is not possible.

4In fact, I think that this is always so; see my Events: A Metaphysical Study, op. cit., pp. 136–144.

5In “Events, Counterfactuals, and Speed”, Australasian Journal of Philosophy, Vol. 70, No. 2 (June, 1992), pp. 187–197, I examined a different argument for the conclusion that an event could have occurred more quickly than it in fact did—which, on one interpretation, means that an event could have ended sooner that it actually did—and found that it was defective. The argument was Bennett’s; see his Events and their Names (Indianapolis: Hackett Publishing Co., 1988), p. 55.


7At one time, I wanted to offer the following as the “No” argument. In the example in §IV, each of the sinkings of S’s parts, s_1, s_2, ..., and s_n, is a temporal part of E, the sinking of S that actually occurred. In addition, it seems to be the case that the sinkings of s_1, s_2, ..., and s_n, also compose an event, E'; and E" is also a proper, albeit a larger, temporal part of the sinking of S. Since E' is a proper temporal part of E, E" is not identical with that sinking.

Now, again, suppose that S had lacked its “last” part, s_n. But then, there would have been an event, E", whose temporal parts were the sinkings of s_1, s_2, ..., and s_{n-1}, and which would have begun at the beginning of I and ended, not at the end of I, but t/n seconds sooner. But that event was, surely, E'.

But then, if the sinking of S, E, had ended sooner than it actually did, by dint of S’s lacking s_n, it would have been E', and hence E". However, this is impossible, for then E would have been identical
with something, namely $E^*$, that it was in fact not identical with, something that was in fact only a proper temporal part of $E$. Therefore, we must reject the claim that $E$, the sinking of $S$, which in fact had the sinkings of $s_1$, $s_2$, ..., and $s_n$ as its temporal parts, could have had the sinkings of only $s_1$, $s_2$, ..., and $s_{n-1}$ as its temporal parts instead. And so no event could, while beginning when it in fact did, have ended sooner, in that way, than it actually did.

However, this argument is not available to me. The reason is that, since, according to me, every event is a change in some object, in claiming that there is the event, $E^*$, I am committed to the claim that $E^*$ has a subject, and that that subject is something composed of $s_1$, $s_2$, ..., and $s_{n-1}$. But, if van Inwagen’s argument, in “The Doctrine of Arbitrary Undetached Parts”, on which the argument in this note is modeled, is correct, then there simply is no such thing, for if it existed, it would be an arbitrary undetached part of $S$.

I am grateful to the referee from Noûs for pointing out this problem. The argument which follows does not have this defect.

4In “The Doctrine of Arbitrary Undetached Parts”, van Inwagen’s chief goal is to argue that physical objects do not have arbitrary undetached spatial parts. And his argument is essentially the same as both the argument of his, that I recounted above, against the view that physical objects have temporal parts and the argument I presented in the previous section: if physical objects had arbitrary undetached parts, then a physical object, by surviving the loss of a part, could, per impossible, become identical with a proper part of itself. Now, the argument I gave in §IV assumes that ship $S$ can survive the loss of a part, $s_n$. Does the supposition that van Inwagen’s argument against arbitrary undetached spatial parts is sound show that the “Yes” argument is not entailed to that assumption? No, for it does not assume that physical objects, like $S$, have arbitrary undetached parts. [Nor is it clear to me that van Inwagen’s conclusion is somehow offensive to right reason. He may very well be right about this.] The “Yes” argument assumes that $S$ has parts, among which is $s_n$, and can survive the loss of that part. It also assumes that $S$’s parts other than $s_n$, in the situations in which $s_n$ is detached (and destroyed), compose something, namely $S$. But it does not assume that $S$ minus $s_n$ (what van Inwagen would surely consider an “arbitrary part”) is actually a thing that is proper part of $S$. Thus, it assumes nothing that van Inwagen’s argument in “The Doctrine of Arbitrary Undetached Parts”, if sound, shows to be false.

van Inwagen does argue, in Material Beings (Ithaca: Cornell University Press, 1990), that allegedly complex material artifacts, like ships, don’t exist. This is a conclusion that I don’t believe; but this is not the place delve into that thorny issue. Nor can I here defend my assumption that artifacts can survive the loss of a part; I just pause here to note it.

5Consider this case. In fact, ship $S$, composed of certain parts, sinks. But, in some possible situation, all of $S$’s parts are replaced, and a different ship, $S'$, is constructed from $S$’s original, discarded parts; and in that situation, $S'$ sinks under conditions precisely like those under which $S$ actually sunk. Here, I think we have a case in which the sinking of $S$, which actually occurred, and the sinking of $S'$, which could have occurred (but didn’t), are distinct (for events essentially have the subjects they in fact have, and $S$ and $S'$ are distinct), and yet they are composed of exactly the same events. See, Events: A Metaphysical Study, op. cit., pp. 200–206.

10Four-Dimensional Objects”, op. cit., p. 253.

11I am grateful to Noûs’s referee for encouraging me to discuss this issue and for the ruler-made-of-taffy example that appears below. I am also grateful to Michael McKinsey for discussing the issue with me.

12Thankfully, neither van Inwagen nor anyone else I know of has ever given this fallacious argument for the modal inductibility and incompressibility of temporal parts.

13And it is, perhaps, for just this sort of reason that we might not think that there are any objects like that.

14See reference mentioned in note 4.

15My thanks go to Cynthia Macdonald, Michael McKinsey, Larry Powers, and Dean Zimmerman for reading and commenting on earlier drafts of this paper. I must also thank Stefan Senczer for his long discussions with me concerning this paper. And I am also very grateful to Noûs’s referee for offering the penetrating and insightful comments and suggestions that helped to make this paper better than it otherwise would have been. [Rats! another question of counterfactual identity.]