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# On Objects as Events and the Ontology of Temporal Parts

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## Introduction

Temporal parts pose something of a quandary. On the one hand, if they exist and fulfill the roles they are frequently claimed to, they appear to be an elegant solution to a number of basic metaphysical problems, change and identity of an object through time foremost, but also a number of smaller (perhaps subsidiary) issues. But on the other hand, an account of their ontology (not the ontology of things the temporal-parts theorist claims they compose) is not easily intuitively forthcoming. The questions of just exactly what a temporal part is and why we ought to believe they exist are troubling indeed. I will here briefly rehash the conventional view on the ontology of temporal parts, raise a few of the choicest problems it faces in the cogency of the existence of temporal parts as entities of the sort that can solve the metaphysical problems in question (or indeed as entities at all), and offer my own alternative view. In the end, we will see that temporal parts can be constructed from the more fundamental notion of events and so become theoretical entities that nonetheless can do the heavy philosophical lifting we expect of them.

## A Standard View of Temporal Parts

We begin with David Lewis's view of what temporal parts are, which I take to be standard (or, at least, originary). Lewis writes:

Some would protest that they do not know what I mean by "more or less momentary person-stages, or time-slices of continuant persons, or persons-at-times." Others do know what I mean, but don't believe there are any such things.

The first objection is easy to answer, especially where the stages are less momentary rather than more. Let me consider that case only, though I think that instantaneous stages are also unproblematic, I do not really need them. A person stage is a physical object, just as a person is (If persons had a ghostly part as well, so would person-stages.) It does many of the same things that a person does: it talks and walks and thinks, it has beliefs and desires, it has a size and shape and location. It even has a temporal duration. But only a brief one, for it does not last long. . . . It begins to exist abruptly, and it abruptly ceases to exist soon after. Hence a stage cannot do everything that a person can do, for it cannot do those things that a person does over a longish interval.<sup>1</sup>

Lewis proceeds to argue (somewhat sneakily) that our world is indeed composed of temporal parts, but that argument will not concern us here. Lewis's typically clear writing requires little explanation, but I question whether his explanation of the nature of temporal parts is, in the end, cogent, if they are to be used to explain persistence and change through time.

The objection I put forward appears in roughly the following form in E.J. Lowe's *A Survey of Metaphysics*.<sup>2</sup> Lowe considers the most obvious (at least to this author) way to think of temporal parts: by analogy to spatial parts. Consider the (spatial) parts of a tree: the trunk, the branches, the leaves, etc.. Are temporal parts the analogue on the time axis of this sort of spatial part? Lowe argues that they cannot be: a branch is itself a spatially extended object of the same exact sort as is the tree. If, he writes, temporal parts are to be the entities on which our account of change and persistence through time is founded, they had better not themselves be the same sort of object that they are to compose in such a way that the composition explains (rather than assumes) the persistence and change through time of the latter.<sup>3</sup>

There is, then, another sort of spatial part of an object to which we might consider temporal parts analogous. Consider a wooden pole and the top inch thereof. There is a sense in which the top inch is a spatial part of the pole. If it is to be the case, Lowe argues, that such a spatial part functions analogously to our elusive temporal parts, then it must be (as intuitively seems to be true) that the top inch of the pole, unlike our tree branches, could not be identified without reference to the pole itself. Otherwise, such parts would spatially compose the pole in the same sense as branches and leaves compose a tree, which grants no insight into the nature of spatial extension, and so analogously-constructed temporal parts would grant no insight into the nature of temporal extension.

This raises a serious problem: if the temporal parts of an object can be defined only in reference to that object, then we cannot, "on pain of circularity", take the object to be the sum of its temporal parts.<sup>4</sup> One might initially suggest that a way around could be

found in the spatial analogy, at least insofar as rescuing an account of change goes: define, as we did with the pole, regions of the tree, but rather than mere spatial-location qualities being among their identity criteria, make the divisions such that we can use other qualitative criteria in their place: the branchy bit of the tree, the leafy bit of the tree, the trunky bit of the tree. But when this version of the spatial analogy is applied to temporal parts, it quickly becomes apparent that the question has been begged, for in order to cogently talk about the branchy bit, the leafy bit, etc. (or, rather, their temporal analogues), we must first have an account of what it is for an object to have different qualities at different parts of its spatial or temporal existence.

### Temporal Parts of Events

The account of temporal parts based on spatial parts faces a severely challenging dilemma if it is to provide us with entities on which we can actually base a non-circular account of change and persistence through time. I suggest a somewhat different model for temporal parts. It begins with the thesis that, in the case of events, which appear at first to be rather different beasts from objects, the temporal parts model makes much better intuitive sense. Take, for example, the event of me rising from my desk, bathing my pet penguin Poppy, and returning to my desk. It makes intuitive sense to say that the event persists through time<sup>5</sup> and yet that it has different properties at different times. For example, the rising-from-my-desk sub-event has the property of taking place in my office, but the Poppy-running-away sub-event takes place, at least partially, in the lake near my house.

Can we call the Poppy-running-away portion of the larger event a temporal part thereof in the same sense of the object-referential theory of temporal parts? Although, intuitively, events have a somewhat different ontology from that of objects, just as with objects, events themselves are never fully present in the world. Rather, they are partially instantiated at different moments by different sub-events, which we might as well refer to as temporal parts. The only difference between this and the object-referential construction of temporal parts appears to be that these instantiations are both temporal parts of the full event and events in their own right. But this need not pose any special problems: just as a plank can both be a plank and constitute part of a ship, a swimming-after-Poppy event can be both a swimming-after-Poppy event and constitute part of the bathing-Poppy event.<sup>6</sup> As long as it is unproblematic that there exists a very large hierarchy of objects (planks compose decks compose ships compose fleets compose militaries compose....) and yet we can distinguish any particular level at which we wish to discuss an object -- we can set the notion of a ship to be at a definite place in this objecthood hierarchy -- then it is unproblematic that there be a similar hierarchy of events.<sup>7</sup>

## Objects as Events with Temporal Parts

Can we treat objects as events in a manner that capitalizes on the intuitive appeal of a temporal-parts theory of events? The difference between objects and events is not so great as it seems. Roughly, we say, objects are physical things,<sup>8</sup> while events are (or are composed of) happenings. But objects also involve happenings. Take a ship. The ship is an object composed of other objects --- planks, nails, etc. --- in a certain arrangement. The mere pile of planks is not a ship: the planks must not only exist but rather must also exist in a certain way. And although it is arguably trivial to say that any object must involve the happening of existence, the happening of existing in a certain way is much more event-like.<sup>9</sup> Furthermore, each plank must behave in a certain way in order for the object in question to be a ship: each must prevent water from passing, each must move in unison or against other planks as required for the ship to move, fire cannon, etc.. But this really does resemble an event! For how is it any different to say that the me-bathing-Poppy event is composed of me and Poppy behaving in certain ways, which is clearly true, and to say that the ship is composed of planks behaving in a certain way? Obviously, this can be applied to any persisting physical object.

Now we can apply to persisting objects the favorable intuitions about temporal parts in the case of events. Just as traditionally-conceived events have (or are) a hierarchy of sub-events, objects as events have a hierarchy of sub-events on the dimension of time – temporal parts. The event of the ship is composed by sub-events, now, on this view, temporal parts: a thousand different planks move together from location A to location B, one plank is removed and leaves the event (just as a person leaves a party) and is replaced by another, etc.. On this view, it is no longer question-begging to place part-divisions at the point of change. Unlike a traditionally-conceived object, whose persistence through time is in question, an event may persist through time with no real intuitive trouble and, furthermore, may be composed of different happenings throughout that timespan without contradiction, so to divide the event into parts based on those changes in happenings is not question-begging.

## The Objection from Reduction

What lies at the bottom of this hierarchy of sub-events? Two options arise: either the chain terminates or it does not. Although conceivable, the notion of the chain not terminating is highly unintuitive.<sup>10</sup> In what would it terminate, then? An object as traditionally conceived -- some sort of physical entity that may itself engage in events but is not composed thereof – would be the best sort of thing. If such an object does not change -- and the theory of objects-as-events does not require it to do so for consistency -- then the thorniness of the change-through-time conundrum do not apply to this primitive sort of object as they do to others.<sup>11</sup> The issue, then, is persistence of such an object. But our intuitions are of so little use here (I, for one, have none) that we may as well go with the view provided by science: for whatever reason, perhaps inexplicable,

such objects do, in fact, persist. And given that our intuitions here will not suggest one theory to be better than another, as long as there is a consistent way for the hierarchy of sub-events to terminate without contradiction the theory of objects as events remains unscathed.

## Properties

I must now answer the question of what it is, on this account, for an object to have a property. It may at first seem unintuitive to ascribe certain sorts of properties to events that we would usually ascribe to objects. But it is not problematic to say that, for example, redness is a property of a fire-truck event, because some of the sub-events that compose the fire-truck event are the sort that confer redness. Take, for example, the event of red paint positioned on the outside of the space that the fire-truck event occupies, and (assuming certain things about science) the event of certain wavelengths of light being absorbed so that the only wavelengths reflected back from the truck are red ones.<sup>12</sup> Redness, of course, can stand for most any physical property ascribable to an event.

Modal properties are even more easily dispatched: it makes perfectly good intuitive sense to ascribe modal properties even to traditionally-conceived events. For example, it can be a property of a party (which is certainly an event) that it would end if Poppy the penguin consumed all the food and trampled the attendees. In similar fashion, it can be a property of the Poppy event that she would end if she encountered a sub-event in which a round lead event shares the same space as does (did) she.

## Why Bother with Temporal Parts?

At this point, perhaps, temporal parts seem unnecessary. Indeed, I have been rather unspecific about the nature of a temporal part in the context of the objects-as-events thesis. They play in to objects-as-events as thus:

On a more traditional temporal parts view, the ontological status of a temporal part is nebulous. On my account, however, a temporal part is identical to a sub-event, an entity which now has an intuitively clear ontology. Temporal parts then provide a useful abstraction over the complexities of events, and to see them as simultaneously being, composing, and explaining the persistence and change in objects (events) is no longer question begging, for it is part of the essential and intuitively acceptable nature of events that they involve change, occurrence, and persistence in a fundamental way.<sup>13</sup>

## Conclusions

The objects as events thesis gives us an intuitively satisfactory construction of and motivation for temporal parts. It lacks certainty only at the bottom of the event-

reduction chain. But here it is more or less as good as any metaphysical theory can be: it accords with our intuitions about very small scales (very few) and, at least *prima facie*, with the models offered us by science.

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<sup>1</sup> David Lewis, "In Defense of Stages," Appendix B to "Survival and Identity," in *Philosophical Papers I* (New York, 1983), pp 76-77 as quoted in van Inwagen, Peter, "Temporal Parts and Identity Across Time," in *Monist*, 83: 437-59

<sup>2</sup> E.J. Lowe, "A Survey of Metaphysics," (Oxford, 2002), Chapter 3, pp. 41-58.

<sup>3</sup> Although, in fact, my final view will be something of a redemption of this sort of spatial-part analogy for temporal parts.

On another matter: the question of what good such spacial parts are doing us might be raised here, since clearly they, too, cannot "explain" the tree's existence and change through space, just as their analogous temporal parts cannot explain the tree's persistence and change through time.

<sup>4</sup> Lowe, 54.

<sup>5</sup> After all, Poppy-bathing is rather an arduous exercise and therefore non-instantaneous.

<sup>6</sup> Note here a tacit assumption that, in the case of events, time can be treated as a dimension analogous to the three of space. This does not seem to me to be problematic. Consider a large party, with different activities going on in different corners. In corner A, beer is being quaffed. In corner B, party-goers are being surveyed for a paper in experimental philosophy. Clearly, these are sub-events of the party.

Furthermore, there seems to be little principled difference in the way in which the sub-events compose the party if they occur simultaneously but at different spatial locations and if they occur in the same location but temporally separated. Note that a standard objection against temporal parts, that time is not, in the case of objects, divisible in the way that a tree is divisible into branches without circularity, as any temporal part of an object must at once compose part of said object and be construed in terms of it does not apply here, because sub-events can be described as events in their own right without reference to a larger event which they partially compose.

<sup>7</sup> It may, of course, be proposed here that I face exactly the same problem as does the view that temporal parts can be thought of as analogous to spatial parts in the sense of tree branches and leaves. We will see below that, by willingness to bite a minor bullet on reduction my view, in the end, avoids the problem.

<sup>8</sup> The ontological status of, say, mathematical objects aside for the moment.

<sup>9</sup> To put it differently, we reframe properties as manners of existence. "The book is red" and "The book exists redly" are rephrasing of the same concept, but in the latter case our intuitions about events can apply.

<sup>10</sup> However, it could be that, because we have very little experience with things at this scale, intuitions here count for very little.

<sup>11</sup> Perhaps, an objection goes, the particles need not change qualitatively, but they do in fact need to move in order for, say, planks to warp. However, movement is not a change in an intrinsic quality but rather in a relational one: movement is change in the relation born by each particle to the space (or, relativistically, to the other particles) around it. Though this paper lacks the scope to do so, I imagine a response could be constructed along the lines that this sort of change -- relational change -- is second sort of primitive.

<sup>12</sup> This is precisely what I mean above by the phrase "The book exists redly." Really, there ought to be a verb denoting red existence, but since there is none, "exists redly" has to do.

<sup>13</sup> Indeed, I can easily imagine a reductive account (perhaps one exists and is merely outside the ken of this author) of events in which we see them as reducing to individual changes (at which point my account of objects as events becomes rather philosophically worthless, since we have to take change as basic anyway) or a reductive account going the other way, in which change reduces to events (which would fit nicely with the view of temporal parts advanced here.