

CAN THINGS ENDURE IN TENSELESS TIME?¹

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It has been argued that the tenseless view of time is incompatible with endurantism. This has been disputed, perhaps most famously by Hugh Mellor and Peter Simons. They argue that things can endure in tenseless time, and indeed must endure if tenseless time is to contain change. In this paper I will point out some difficulties with Mellor's and Simons' claims that in tenseless time a particular can be 'wholly present' at various times, and therefore endure, as well as have incompatible properties at those different times, and thereby change. In effect I argue that they do not resolve the charge that the tenseless view of time is incompatible with endurantism because the tenseless view does not allow anything to change temporal location and thereby come to be 'wholly present' at various times.

1. Introduction

An important question in the philosophy of time is whether the tenseless view of time is compatible with an *endurantist* view of persistence, or if it is committed to the view that things *perdure*. The question is particularly important to those who believe that unless the tenseless view can accommodate for enduring particulars, it cannot give a convincing account of change in the standard sense; i.e. as a variation in the properties of one and the very same particular existing at different times. There are those who accept as coherent an account of change in terms of variation between temporal parts of a perduring entity. For them the important thing is that metaphysics accounts for the way the world appears to us, and perdurance does give an account that is compatible with the *appearance* of enduring particulars that gain and lose properties over time. However, I am here concerned with those who have not given up on the possibility that change, in the standard sense, is not mere appearance.

The incompatibility of the tenseless view of time and endurantism has been disputed, perhaps most famously by Hugh Mellor (1981; 1998) and Peter Simons (2000*a*; 2000*b*) (but see also Faye 1989). They agree that change requires enduring particulars, but since they favour a tenseless view of time they must show that it is compatible with endurantism. In this paper I will point out some difficulties with Mellor's and Simons' claims that in tenseless time a particular can be 'wholly present' at various times, and therefore endure, as well as have incompatible properties at those different times, and thereby change.

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It will be necessary to deal with a complication in my discussion of Mellor's and Simons' arguments, related to a possible ambiguity in the use of the notion 'wholly present' (and consequently of endure). The ambiguity has to do with recent attempts to formulate definitions of 'wholly present' that are neutral to different theories of time (Theodore Sider 2001; Josh Parsons 2000; Katherine Hawley 2001; Neil McKinnon 2002; Thomas Crisp & Donald Smith 2005). As any reader familiar with these works will find out, my argument against Mellor and Simons is based on a different understanding of 'wholly present'. Consequently, the question arises whether I might have built into my discussion an understanding of 'wholly present' that is manifestly incompatible with tenseless time, and therefore, by default, an understanding that Mellor and Simons could not have endorsed.

To deal with this dilemma, and in the service of a clearer exposition, I will first argue that Mellor and Simons fail to accommodate for 'wholly present' in accordance to what I take to be the standard common sense version of endurantism. Only after that will I consider the alleged theory neutral accounts, and discuss whether it would significantly affect my conclusion to assume that Mellor and Simons in fact favour that sort of account. In this way I will discuss two questions in turn: (i) have Mellor and Simons found a way of accommodating endurantism, and hence change, within the framework of a tenseless view of time, in a way that captures all the intuitions that friends of endurantism typically associate with enduring particulars, and (ii) is there a special 'theory neutral' endurantism that is compatible with a tenseless view of time, and which satisfactorily resolves my worries about a tenseless account of change. My answer to both questions will be no.

2. The link between time and persistence.

A particular persists, roughly, if it continues to exist for exist for more than a single moment of time. But, there are two competing doctrines about the nature of persistence; *endurantism* and *perdurantism*. For the sake of this particular discussion, we can assume that they are complete contraries, whereas it appears to be at least conceptually possible that some things endure while other endure (See Hawley 2008 for overview).

Endurantism is the standard common sense view of persistence that harks back at least to Aristotle's talk of 'the body which is carried along' both in time and in space (*Physics*, Book 4, Part 11). It depicts ordinary material objects as three-dimensional things that move through a succession of times. A recent formulation of endurantism is given by Hales and Johnson:

Endurantism, then, is the view that objects have three spatial dimensions and move through time. Persistence in three dimensions means that an object is at one time, then the next time, then the next time, and so on; things are wholly present at each time at which they exist. An object that is here now is entirely here now, and only here now. Nothing that is a part of an object now is somehow still around in the past, or waiting for us in the future (2003).

The idea that enduring particulars move through time is not peculiar to the advocates of the tensed view of time. According to Theodore Sider those who attempt to combine endurantism with the tenseless view of time, including Mellor, depict enduring objects as “‘wholly present entities’ which sweep through spacetime without being spread out in spacetime” (2001, p. 69).

It is important to note that it is the temporal motion alluded to that is supposed to allow three-dimensional objects to exist at many times and at each time exist *completely* and *only* at that particular time, i.e. without having parts ‘lying around’ at other times. How things ‘move’ through time is admittedly somewhat obscure, but needs no further explanation here. The focus is on the possibility of combining endurantism with the tenseless view time and one can be completely convinced that passage of, or in, time is unintelligible and still doubt that it is possible to combine endurantism with a tenseless view of time. In fact, one may be convinced that endurantism is incoherent because it requires temporal passage.

Perdurantism, in its turn, is the view that persisting things are never entirely contained in any given time, but are instead composed of temporal parts that each are contained in a particular time. Although not very conceptually difficult to grasp, by analogy with the way spatially extended objects have spatial parts that each exist in different regions of space, then perdurantism is not a view people come to adopt naturally; they need to be persuaded by philosophical argument. Either they are persuaded by arguments saying that perdurantism is the only option because endurantism isn’t at all feasible, or because they find that perdurantism offers neat solutions to metaphysical problems that endurantism does not solve. For our purposes it is interesting to have a look at two arguments against endurantism, because these are arguments that also apply to a tenseless endurantism.

Firstly, there is what I will call the *argument from qualitative identity*, which is basically David Lewis’ *problem of temporary intrinsics* (1986, p. 202). The same argument can also be found in J.M.E. McTaggart (1927, sect. 163) and Aristotle ascribes a simpler version of the argument to the Sophists (*Physics*, Book 4, Part 11). The argument goes as follow. If a particular, *a*, has the property *F* at a time t_1 , but not-*F* at t_2 , then it follows *visavi* Leibniz’ Law that *a* is *F* and not-*F*, which is contradictory. Lewis understands this to be a problem inherent in the standard conception of change, i.e. in the possession of one and the same thing of different properties at different times, and suggests it should be discarded in favour of the view that change is a variation in the properties of temporal parts of a four-dimensional object.

I have elsewhere argued that the problem of temporary intrinsics is not a problem intrinsic to the standard conception of change (2001). It is a problem that arises when one tries to combine a standard conception of change with a tenseless conception of time, and, of course, only when one assumes that the identity of objects resides in their qualitative make-up. In particular, there is no clear contradiction in the fact that *a* is *F* at t_1 and not-*F* at t_2 unless one

assumes that how the world is at t_1 and t_2 , respectively, are equally existent and real states of the world, and hence that a must exist equally at t_1 and at t_2 , being both F and not- F . Lewis admits as much when noting that presentism, the view that only the present exists, does seem to avoid the problem, even though he finds presentism too obscure to take seriously. Consequently, Lewis' problem of temporary intrinsics is above all a problem for the kind of combination of endurantism and tenseless time that Mellor and Simons attempt to construe. The question is, how do they avoid the problem of temporary intrinsics?

A second problem for endurantism is that it appeals to the passage of time, or of things in time, which has been argued to be contradictory or otherwise unintelligible beyond credibility (McTaggart 1927, Ch. 33; J.J.C. Smart 1972; Mellor 1981 & 1998). Whether or not the notion of objects being 'carried along' in time is intelligible, then it is an historical fact that temporal passage is supposed to be what allows three-dimensional particulars to be at many times in succession, and be at each particular time completely contained in that particular moment of time (as they appear to be). One might even say that such passage is stipulated despite its obscurity because it is believed to be the only way of allowing another very alluring notion; the idea that ordinary objects are wholly present throughout their existence.

Temporal passage is usually cashed out in terms of a temporal analogue to spatial movement. A three-dimensional object cannot occupy two different temporal locations without somehow passing from t_1 to t_2 , any more than it can be 'wholly contained' within two different portions of space without moving from one to the other. However, since the tenseless view of time denies that anything passes through time, Mellor and Simons will have to be able to provide some other way of enabling enduring particulars to be 'wholly present' at a variety of times in succession.

Indeed, it is mainly the analogue between location in space and in time that ultimately ground the idea that one's preferred view on the nature of time, should dictate one's preferred view on the nature of persistence according to two linkage thesis: 1) if time contains passage (i.e. is tensed), persistent things *can* endure, and 2) if time is tenseless (i.e. does not contain passage), persistent things *must* perdure (Carter & Hestevold 1994; Loux 1998). It is not argued that the tensed view of time entails endurantism, just that the tensed view of time goes naturally with it, because a tensed time makes endurance possible by allowing temporal passage (and hence allow change of temporal location). On the other hand, it is argued, the tenseless view of time entails perdurantism, because a tenseless time could not contain enduring entities since it does not allow change of temporal location. It is admitted that the tensed view of time is compatible with perdurance, but that combination is not often defended and not under scrutiny here. The focus in this paper is on the question whether tenseless time can at all contain enduring entities

3. The Temporal Parity Thesis vs. Being ‘Wholly Present’.

The combination of endurantism and the tenseless view of time is problematic exactly because the tenseless view, by denying the reality of tense, is essentially the contradiction of the view that anything ‘passes’ through time, i.e. changes temporal location. The rejection of tense does not mean that the advocates of the tenseless view deny the existence of those things we *think* of as being in the future or past. On the contrary, they positively admit their existence, they just deny that they exists in a different way than anything else that exists; they do not exist as ‘future’, ‘present’ or as ‘past’ entitites, they simply exist at a time. The tenseless view is thus intimately connected to what is called the *temporal parity thesis*, i.e. the claim that contrary to what appears to be the case, what is existent and real is not confined to the present:

Temporal Parity: For any times t_i and t_j , neither t_i or t_j exemplifies the monadic properties of pastness, presentness, or futureness. It is not true that the state of the world at t_i or t_j uniquely reflects “the way things really are.” Rather, the way things *really* are includes both the way things are at t_i and the way things are at t_j (Carter & Hestevold 1994).

In other words, nothing is really ‘future’, ‘present’, or ‘past’, everything at all times exist in the very same way as everything else, i.e. all times exist in parity.

The *temporal parity thesis* presented above, is often presented as an important corollary to the tenseless view (see, e.g., Carter and Hestevold 1994). I think it is not just a corollary but in fact equivalent to the tenseless view. The temporal parity thesis cannot be understood as merely a positive claim about the objective nature of temporal reality, but must also be understood as a denial of the view that temporal reality is the way it appears to be, i.e. a denial of tense (for a more detailed argument see Ingthorsson 2001). Consequently, the temporal parity thesis is the claim that time is not tensed, but tenseless.

Admittedly, the claim that all moments of time are equally existent and real, can be given a tensed interpretation: if time consists in the coming into existence of new states of affairs, and all moments of time come into existence in the present, then all moments of time are existent and real in the same (tensed) way. But, this is not what is meant by ‘temporal parity’, because this does confine existence to the present. The principle of temporal parity is always formulated as a denial of the objective reality of tense. It states that contrary to the *prima facie* appearance of time, the future and past exist just as well as the present. Taken in this sense, to hold temporal parity as true is to believe that everything in the history of the universe exists in parity with everything else, albeit located at different positions in time. In this sense the tenseless view of time is equivalent to the claim that everything coexists in time.

The term ‘coexistence’ is perhaps unfortunate because it is usually associated to existence at a time, which may cause confusion. Nathan Oaklander e.g. denies that the tenseless theory, is committed to accepting that all things coexist (1998). However, Oaklanders denial is directed against C. D. Broad’s claim that the tenseless theory entailed that everything coexists

timelessly (1938, p. 307). Broad thought (at least in 1938) that time, and tense, is essentially about concrete existence being confined in some sense to particular times, and therefore believed that to coexist must be to exist either (i) at one and the same time, (ii) at all times (everything exists always), or (iii) at no time at all (like abstract objects). Oaklander correctly notes that the tenseless theory is not committed to any of these alternatives because it does not hold that existence is confined to a particular moment of time. According to the tenseless theory, things can exist at different times, but without their different locations imposing any special ontological status on them, in terms of existence and reality. But then, I argue, everything does coexist. Not in any of the senses Broad intended, but in the sense that there is no room for saying that things located at one time exist, while the things located at some other time do not. On the tenseless theory, existence cannot be relativised to times. To talk only of the terms that hold the same location as being coexistent, can only be a figure of speech, on the tenseless view, since the theory denies that existence is confined to any particular moment of time.

Any theory that is supposed to be compatible with the temporal parity thesis, e.g. Mellor's and Simons' theories of endurance and change, is committed to the view that everything coexist in this sense. To my mind, then, the problem of explaining how things could endure in tenseless time is to explain how the claim that things can exist completely and only at each of the many times it exists at in succession, is compatible with the claim that everything coexists in time. Can a three-dimensional object be, objectively speaking, equally existent and real at many times, and equally 'wholly present' at each and every one of those times? This does sound like saying that the thing exists only at one time, and yet exists just as much at many other times.

Unfortunately, it is not clear everybody uses the phrase 'wholly present' equivalently. Like Carter & Hestevold (1994), C.J. Klein (1999), and Hales & Johnson (2003) I understand endurantism as saying that a thing is 'wholly present' at a time in the sense of existing objectively speaking in their entirety at one particular time, and 'no-when' else. I think this understanding is motivated by the spatial analogue typically used to cash out endurantism. I also take Trenton Merrick's claim that endurance entails presentism as an indication that he too understands 'wholly present' in this way (1999). To my mind, to identify being 'wholly present' with existing exclusively at a particular time, amounts to no more than making explicit a previously implicit understanding of what it involves to endure. But I cannot exclude that Mellor and Simons may understand 'wholly present' in a different way. We will have reason to return to this point towards the end of the paper.

One should also note that concrete particulars are supposedly 'wholly present' at a time and place, in a different way than universals are 'wholly present' at a variety of places and times in each and every particular in which the universal is instantiated. The way universals are 'wholly present' at various places and times, may perhaps be used metaphorically to

convey some aspect in which enduring particulars are ‘wholly present’ at different times, but, whatever one might want to call a universal instantiated in a set of particulars spread out in time and space, it is not an enduring entity.

In this situation, it seems to me that there are two strategies open to Mellor and Simons: (i) negative strategy; argue that the linkage theses do not show conclusively that the combination of endurantism and tenseless view of time is impossible (in which case the combination can be given the benefit of the doubt), or (ii) positive strategy; presenting an account of how things can in fact endure in tenseless time. It seems to me that Mellor argues mainly negatively in the fashion presented in (i), while Simons argues more in the positive fashion presented in (ii). I at least will only consider Mellor’s negative arguments and Simons’ positive argument.

Mellor argues that it is obvious that things do not have temporal parts; they endure. However, he claims, they must endure in tenseless time because he thinks McTaggart’s argument proves that the tensed view of time is contradictory. However, Mellor contests McTaggart’s view that only the A-series can contain change (1927, § 311). In other words, Mellor presents us with three alternatives, (a) endurance in tensed time, (b) perdurance in tenseless time, (c) endurance in tenseless time, and argues that the first is contradictory, the second does not allow change, and therefore we must choose the third if we want to allow change at all in our philosophy. He thinks we must accept endurance in tenseless time despite its difficulties, because otherwise we will have to give up change, and claims that, anyway, the arguments outlining the difficulties are inconclusive. Mellor emphasises the arguments in favour of a tenseless theory of time, but does not provide more than the outlines of an account of how things actually can endure in such a time. His argument mainly strives to show that there are no good arguments against the *assumption* that things endure in tenseless time.

Simons, on the other hand, assumes the tenseless theory of time to be true, and proceeds to construe a positive theory of the way things can be conceived to endure in tenseless time. Briefly, according to Simons, an enduring thing is “an abstractum over occurrents under a suitable equivalence relation” (Simons 2000b). I will return later to the exact meaning of this claim, but for the time being point out that Simons presents enduring entities as existentially dependent on a base of events.

Mellor’s and Simons’ idea is that a combination of the tenseless view of time and endurantism would be the perfect match, since it would avoid the contradictions of the tensed view of time and the lack of intuitive appeal of perdurantism.

4. Mellor’s solution

Mellor does indeed seem to agree with my understanding of the problem, i.e. that it consists in showing how the coexistence of everything can be made compatible with change in time:

If a poker is hot at 2.15 and cold at 3.15, then those always were and always will be its temperatures at those times. These *B*-facts no more change over time than spatial *B*-facts change across space. But what stops a poker's being hot at one end and cold at the other being a case of change is precisely that its hot and cold ends coexist in a single world, albeit in different *B*-places. But then, as we saw in chapter 2, on a *B*-theory the hot poker and the cold also coexist in a single world, albeit at different *B*-times. So if, as everyone agrees, coexistence rules out change in the spatial case, how can it be compatible with change in time? (1998, p. 71)

It is important to note that Mellor uses the term 'B-theory' for the tenseless view of time, and 'B-facts' for states of affairs existing in B-time. Also, that in this citation from *Real Time II* Mellor has reverted to talking of existing states of affairs in terms of 'facts', instead of using the term 'facta' as in (1995). Hence, B-facts are simply existing states of affairs that have a certain temporal location but lack tensed properties. It does seem as if Mellor accepts that everything coexists in the sense I describe above, and needs to find an argument that shows that coexistence is compatible with change and endurance, since change presupposes enduring objects.

Mellor claims that there are mainly two objections to the tenseless conception of change: "These are that the theory has no way of distinguishing properties varying over time from properties varying across space, and that it reduces changes to changeless facts". (1998, p. 84) His answer to the first objection is that causality distinguishes temporal variation from spatial variation. As an answer to the latter he claims that it really is no objection at all because "why [...] must facts change in order to *be* changes"(1998, p. 84).

Let us take a closer look at Mellor's answer to the first objection, that in tenseless time variation in time and variation in space are analogous. His answer is that the analogy between the two kinds of variation disappears when one realises that variation in the properties of a thing over time is due to a causal factor, while variation between the spatial parts of a thing is not. We could take this as a suggestion that the popular account of change mentioned earlier should be augmented so as to include a reference to causality, perhaps in the following way:

Change is the possession by a numerically identical entity *a* of different and incompatible properties *F* and *G* at different times *t* and *t'*, provided the difference between *a* having the property *F* at *t*, and lacking *F* at *t'* (or vice versa) is due to a causal factor.

Now, I do not dispute that the difference in the properties of a thing between times is due to a causal factor, or that the difference between spatial parts of a thing is not causal. I just do not think that Mellor has explained why variation in the properties of a thing persisting in tenseless time need not be a variation between temporal parts of the thing, by showing that variation in time is different from variation in space with respect to causality. Or, in other words, I do not think he has explained how this appeal to causation blocks the conclusion that if every moment of time is exists in parity then the possession by a thing of different properties at different times must consist in the existence of two distinct coexisting facts in a

single world. Nor does it explain why we should not, like Lewis, conclude that the only way to avoid contradiction is to assume that the two facts are constituted by distinct temporal parts of a perduring entity.

I think Mellor has oversimplified the problem he is confronted with. The problem is not to distinguish between variation of properties over time and in space in any old way, but in ways relevant to change. The tenseless view has not really been criticised for having *no means at all* to distinguish properties varying over time from properties varying over time. No one is saying that on the tenseless view variation in time *is* spatial variation; they are saying that it depicts the two kind of variations as being *analogous*. To say that two things are in some way analogous, presupposes that the two can be distinguished, but that they resemble one another in some particular respect. If they were identical they would not be analogous.

The analogy in question concerns the coexistence of spatial and temporal properties/parts. The tenseless view of time is charged for being committed to the view that things have temporal parts, because it holds that an object existing at many times, and having different properties at those times, must be equally existent and real at all those times. This, it is argued, is impossible, at least if one assumes that the thing is equally ‘wholly present’ at the various times. A thing cannot be spatially extended and be ‘wholly’ contained in each and every part of that spatial extension, and, by analogy, it cannot be temporally extended and be ‘wholly’ contained in every part of that temporal extension. If it cannot exist exclusively at each particular time, but is nevertheless equally existent and real at every one of those times, then it must be different parts of it that exists at each particular time. This depicts the variation in the properties of a thing between times as being a variation between its coexisting parts, and therefore analogous to the variation between the coexisting spatial parts of the thing. The problem now under consideration is therefore not simply a matter of distinguishing the two kinds of variation in any old way. The analogy will only go away if it can be shown that variation in the properties that a thing has at different tenseless times need not be a variation between its coexisting parts.

Causality, I am afraid, is really of no help to Mellor because there are two very different accounts of causality: (i) the view that causes bring their effects into existence, i.e. the *production view*, and (ii) the view that causes are only correlated to their effects but do not produce them, i.e. the *correlation view* (Ingthorsson 2002, pp. 31-43). Mellor does not explicitly discuss the difference between the production view and the correlation view of causality, nor the difficulties associated with fitting each view to the metaphysics implied by his theory of time. Consequently, I have not been able to discern beyond doubt which view of causality he endorses. If I were pushed, I would say that his account of causality in terms of relations between facts (Mellor 1995), combined with his view of time where facts coexist in a single world, do commit him to a correlation view. Either way, Mellor faces serious problems. If he endorses a production view, he must show that a production view is

compatible with temporal parity, in which case he has to show how the thesis that causes produce effects, i.e. bring effects into existence, can be made compatible with the claim that everything at all moments of time is equally existent and real. *Prima facie*, the idea of something being brought into existence that did not exist before is completely contrary to the view that everything coexists in time. If the effect is as existent and real as the cause, from any point of view, then in what way is the cause responsible for making the effect come into being?

On the other hand, if Mellor endorses a correlation view, he must show that it is compatible with endurance, i.e. he must show how the view that causality is a correlation between temporally distinct but coexistent entities, can be made compatible with the view that things are not coexistent at all the times of their existence. This he does not do. He does not seem to be aware of the different consequences a production view, or correlation view would have for the overall coherence of his theory.

To my mind, Mellor's appeal to causality does not explain how variation in tenseless time is different from variation in space in respects relevant to change, i.e. as not involving variation between coexisting temporal parts of a perduring entity. Distinguishing variation in time from variation in space by appeal to causation does not automatically establish that variation in time amounts to change, it merely establishes that they are at least different in this respect: a difference in the properties of the temporal parts of a thing is correlated to a causal event, while a difference in the properties of the spatial parts of a thing are not. The appeal to causality merely snares Mellor into a further problem, namely to show that the linkage thesis between the correlation view of causality and perdurance, e.g. as argued by Haslinger (1989), is invalid.

It might be objected here that I have here assumed without argument that a thing existing in tenseless time must have temporal parts, which is just what Mellor denies. This is not correct. I have merely assumed that a thing existing at a variety of times in a tenseless time must coexist at all those times, and try to evaluate whether Mellor provides any reasons that block the previously sketched argument that temporal parity requires, to avoid contradiction, that a persisting thing be divided into parts existing at various times. I fail to see that Mellor's appeal to causation blocks that argument. On the other hand, in light of the ambiguities surrounding 'wholly present' Mellor might be interpreted as saying that in spite of all these difficulties three-dimensional objects can co-exist at many times and are at each time equally 'wholly present' at all of them. But I fail to see how his appeal to causality engages with the spatial analogue argument that forbids this, nor with the problem of temporary intrinsics that declares that it leads to contradiction.

Let us now turn to Mellor's answer to the second objection, i.e. that the tenseless theory reduces change to changeless facts. Mellor claims that this objection rests on the absurd view that change requires that facts must change, but I am inclined to think that Mellor

misunderstands the objection. The objection does not concern the nature of the facts, but how the tenseless view of time seems to reduce changes to facts. It is generally agreed that facts, i.e. existing states of affairs, do not change. States of affairs either exist permanently, according to the tenseless view, or they come into and go out of existence, according to the tensed view, but on neither view do the facts change. It is the *constituent parts* of those states of affairs that change, i.e. things. It is the window that changes from being whole to be broken when it is hit by a brick, not the state of ‘wholeness’ that changes into a state of ‘brokenness’. Endurantism plays a central part in the tensed conception of change, and the question is whether endurantism is compatible with the tenseless view of reality. Of course, if tenseless time cannot contain enduring things, its only hope of containing change is if the facts change, but this, as Mellor rightly observes, is absurd. However, the real thrust of the criticism goes unanswered, how can the common constituent of two facts change when it coexists in both? Mellor’s appeal to causation is an attempt to answer that sort of argument, but it is not convincing.

A brief note is in order about the use of ‘permanently’ in the above claim that the tenseless view depicts facts as existing permanently at a certain time. Many temporal words in ordinary English tend to become awkward in discussions about the different theories of time, since they have connotations to ideas that are incompatible with the theory in question. Permanently may be associated with existing always, which is an unfair description of the coexistence of facts in B-time. Rather it must be taken to refer to the invariant location of B-facts. If a fact x is located at t_1 , then x is located at t_1 from any point of view, i.e. x does not change position in time, nor is it non-existent relative to other points of time; it is merely non-located at other times than t_1 .

The objection that the tenseless theory of change depicts changes as a conjunction of changeless facts is not an objection to the tenseless characterisation of the nature of facts, but to the reduction of change to such facts *due to the lack of enduring entities*. That is, a change is commonly believed to consist in the possession of different properties F and G by one and the very same thing a at the different times t and t' , in which case we have two states of affairs which have a as a common constituent. This is possible if a can endure and change from being F to be G . However, if things perdure, it is different parts of a that have the different properties, and then the two states of affairs really do not have a common constituent; because it is different parts of the thing that are constitutive parts of different states of affairs, there is nothing that changes from one state to the other. On this account, change is variation, or a mere difference, between two distinct states of affairs. It is therefore entirely besides the point of Mellor to ask “why [...] must facts change in order to *be* changes?” (1998, p. 84). Mellor’s critics do not require him to explain how facts change, but how his tenseless view allows the constituents of those facts to change, because if the constituents do not change, change is merely a conjunction of facts.

Mellor misreads the objection as an objection to the tenseless characterisation of facts, i.e. that they are changeless, and points out that as such the objection is absurd because it is not facts that change but the things to which changes happen. Mellor presents endurantism as an answer to the objection that the tenseless view reduces change to changeless facts, when the objection really is directed against the idea that tenseless time can contain enduring things. Mellor makes certain logical and semantic distinctions between *facts* and the *things* those facts 'are about', and between *events* and the *things* that those events happen to, in order to justify our talking and thinking about them as independent entities, some of which exist permanently at different times, while others are 'wholly present' at different times. But, he does not give any reasons for why things really can exist exclusively at every one of the many times they exist at, as we think they do, when it is assumed that everything coexists in time.

To my mind, Mellor's definitions and distinctions between things, facts, events, and changes, merely serve to further establish their interdependence. The distinctions between things, changes and facts are of special relevance. Mellor understands changes as consisting in things having different properties at different times. Each having of a property by a thing is of course a fact; fact being an existing state of affairs. But, facts exist permanently at certain times, according to the tenseless view, and since they have the thing as a constituent part, the thing must exist permanently at that time too, if the fact does. There can be no fact involving *a* being *F* at *t*, unless *a* exists at *t* being *F*. Now, changes in a thing involve at least two facts, and each fact consists in the thing having a certain property. If the facts exist permanently at two different times then the thing must exist permanently at the two different times, given that the thing is a constituent part of those facts, and yet the thing is supposed to exist exclusively at each particular time. This is an equation I find difficult to solve.

My conclusion is that Mellor does not adequately answer the objections he mentions. He fails to answer the first because he fails to appreciate the difference between a production and a correlation view of causality, and I think he misunderstands the latter objection, and therefore never comes round to addressing the problem that gave rise to that objection. The original problem was how a thing could constitute two different and incompatible states of affairs at two different times, and exist exclusively in each particular state of affair, if it was assumed that all moments of time are equally existent and real, i.e. if it was assumed that everything in time coexists. If two states of affairs, involving one and the same thing, coexist in time, it is argued, then that thing cannot exist exclusively in each state; it must be different parts of it that exist in each state. Mellor, I think correctly, does not accept the perdurance account of persistence, because he thinks change requires a difference in the properties of one and the very same thing, but he does not reject the thesis that everything coexists in time. He still faces the problem of showing how a thing can coexist without contradiction in incompatible states of affairs, and of explaining in what sense a thing coexisting in that way can at the same time be 'wholly present' in each particular state of affairs.

5. Simons' theory of invariants

Peter Simons does not himself provide a theory of time, but he prefers the tenseless view, and assumes it to be the correct one. He agrees with Mellor that perdurance is not a possible explanation of change. He thinks that there must be enduring things, or 'continuants' as he calls them, if there is to be any change at all, because change requires identity as well as difference in properties. Simons' suggestion is, in short, that an enduring entity is "an abstractum over occurrents under a suitable equivalence relation" (2000*b*). By saying that it is an abstractum, Simons does not mean to say that the enduring entity is an abstract object in the traditional sense, i.e. something outside space and time inaccessible to causal influence, but rather in the sense that it consists in the invariant features of an underlying base of *concretely* existing occurrents located in space and time. By 'occurrents', Simons means events, i.e. entities that do consist of temporal parts. An enduring entity is the invariant features reproduced in a set of temporal parts of a base of occurrents. In fact, Simons suggests using the term 'invariants' for enduring entities (2000*b*).

Let me point out certain things about Simons' characterisation of enduring things as invariants: (a) Simons' views are different from traditional endurance views in that he thinks the occurrent base is ontologically prior to the enduring thing, and (b) Simons' must hold that the occurrents of the base, and all their temporal parts, must objectively speaking be equally real and existent, in accordance to the tenseless view of time that he presupposes. Like Mellor, Simons also faces the problem of explaining in what sense the invariant exists exclusively in each and every temporal part of the occurrent base existing at different times, without violating temporal parity, in order to cash the invariant out as an enduring entity proper.

I will not venture into the technical details of Simons' theoretical construct of invariants as 'abstracta over occurrents under a suitable equivalence relation', we can assume it to hold good as such, i.e. as an intelligible theoretical construction of how to conceive of the relationship between things and events. But, even so, it does not appear to me that he succeeds to avoid, or solve, the problem now under consideration, notably that of change. The problem of change was to provide an entity that is supposed to be strictly the same across time, but also could have different and incompatible properties at different times. As I see it, the requirement of strict identity is satisfied by Simons' account, but not in the sense that the identical entity is 'wholly present' at every particular time at which it exists, in the relevant sense of existing exclusively at each time. As for the requirement of change, i.e. the variation in the *intrinsic* properties of the thing between times, which is not just a variation between temporal parts, then I do not see that it is satisfied at all. How does an *invariant* change when it is something that essentially does not change? It cannot consist of, or contain, anything variant, because it is in fact an invariant.

According to Simons' thesis, it is the occurrents in which the continuant is an invariant feature that provide the variation between times. This is indeed how they are distinguished. The continuant can be distinguished from the occurrent base, by abstraction, because it is what is invariant in the diverse occurrent base. It is the invariant nature of the invariant, that gives it its identity, and it is the diversity of the occurrents that provide the variation. Is there a sense in which this variation in the occurrent base can be said to be a variation in the invariant, as opposed to between the temporal parts of the occurrents? It appears as if not even Simons thinks there is:

How would we expect a continuant to have properties? The answer is that with the exception of those properties it has unqualifiedly, they derive in some way from the properties of its underlying occurrents. [...] For example a life-occurrent may swell in spatial extent along its temporal axis. In such a case we say the associated continuant grows. (2000b)

I assume that the properties it has unqualifiedly, it has at all times, and then the apparent difference in the properties of an invariant between times really is a matter of the invariant inhering in different temporal parts of the underlying occurrent base, and thereby being associated with the different properties of those temporal parts. Change, on Simons' account, is a difference in association to various properties of different temporal parts existing at different times, not a difference in the properties which a continuant has simpliciter. This, if anything, reduces change to a variation between temporal parts, although not to the temporal parts of the continuant.

One can at least say that change, on this account, does not involve change of intrinsic properties, but it may perhaps be said to involve changes in the associations that a continuant has to different properties of different temporal parts, and those associations is surely something the continuant has simpliciter; thus there is genuine change. But, the sense in which this could be construed as a case of change proper is not clear, mostly because Simons has not solved the problem imposed by the tenseless existence of the continuant at many times, notably that it coexists at all those many times. If the thing coexists at all the times it has different associations to different parts, it is not clear how it changes those associations, as opposed to just having them.

Let us be quite clear that the sense of being 'wholly present' relevant to this issue is not the sense in which a universal is 'wholly present' at a multitude of places and times, because a universal is something that does not change. An invariant could easily be conceived of as a universal in this sense, and that it is 'wholly present' in the same sense that each instance of 'redness' is of course never lacking in its 'redness'. A universal, when considered as being real only through its instantiations in time and space (as opposed to being an ideal form outside of space and time), is at least in some sense a concretely existing entity. But, a universal is not exclusively present at any single time and place (except perhaps accidentally if it would be possible for a universal to be instantiated only once), even though it may be

thought to be ‘wholly present’ in the sense that its essence as what kind of universal it is, is never lacking (or incomplete) in any instantiation of it. If the invariant is a universal, it is (if not by anything else, then at least by definition) not subject to change, and change was one of the most important motivations to develop the account in the first place.

6. ‘Wholly Present’, ‘Singly Located’ and ‘Multiply Located’.

Now, it is time to consider the possibility that I have all along argued against Mellor and Simons from the perspective of a version of endurantism that they do not in fact endorse. I have characterised endurance as an object’s passing through a succession of times as a three-dimensional whole, in such a way as to make it at any given time exist at that time and only at that time. According to recent literature this makes me guilty of failing to recognise the distinction between what Josh Parsons calls ‘wholly located’ and ‘singly located’, and of course of failing to realise that being ‘singly located’ is not essential to endurance:

It’s important not to confuse ‘wholly located’ (which is the opposite of ‘partially located’) with ‘singly located’ (which is the opposite of ‘multiply located’). Everyone can agree that some things are multiply located in time, that some things persist, in other words. Everyone can agree, too, that some things (be they persisting things, or only the temporal parts of persisting things) are wholly located at certain times. The difference between endurantism and perdurantism is on the issue of whether some things are both wholly and multiply located at those times at which they exist. An endurantist says yes, there are, a perdurantist says no.

There is not enough space to argue for this at length here, but I believe that this passage adequately captures what is common to all recent attempts to provide a theory neutral definition of ‘wholly present’, i.e. one that also is compatible with the tenseless view of time, notably the assumption that everyone can agree that to persist is to be multiply located in time (Theodore Sider 2001, Ch. 3; Josh Parsons 2000; Katherine Hawley 2001; Neil McKinnon 2002; Thomas Crisp & Donald Smith 2005). My answer is that they are all mistaken. Everyone cannot agree to this. In particular, those who advocate the kind of endurantism I have presented here cannot, or should not agree. To my mind, the real question is not whether some things could be both wholly and multiply located at the times at which they exist, or merely multiply located (by having temporal parts at different times). The question is rather whether things could be multiply singly located (endure), or must be reduced to a multiply located set of singly located parts (perdure). The middle alternative, that things are multiply wholly located, seems to me to be wholly untenable.

I have so far argued under the assumption that Mellor and Simons are arguing that things can be multiply singly located in a tenseless time, and that this is impossible due to the constraints of the temporal parity thesis. But it is possible that they were opting for the third alternative suggested by Parsons, that things are multiply wholly located. The problem is that this is exactly the kind of view Lewis is attacking in the problem of temporary intrinsics, it is exactly the kind of view the spatial analogue argument forbids. And my point is that Mellor

and Simons do not really address these difficulties, nor do the philosophers that provide these allegedly theory neutral accounts of ‘wholly present’.

All attempts so far to formulate a theory neutral account of ‘wholly present’, do so in terms of a ‘parthood at a time’ conception, on the assumption that it makes sense to relativise the location and/or compositionality of a mereological whole to times within the context of a theory of time that forbids relativisation of existence to times; they entirely neglect the problem of the coexistence of all the temporally relativised ‘whole presences’ of one and the very same mereological whole.

To my mind, the attempts to create a theory neutral definition of ‘wholly present’ have really gone to such lengths to make the definition fit the tenseless theory, that they have come to exclude the tensed version of ‘wholly present’. They present the alternatives as being either ‘multiply wholly located’, or ‘multiply partially located’, failing to notice that the way an object is ‘multiply located’ will differ depending on your view of time; is the thing equally located at all the multiple locations, or is it not. Taking into account this difference reveals a third alternative, notably ‘multiply singly located’, which is the standard common sense conception. In conclusion, by omitting the idea that a ‘wholly present’ object is objectively speaking only present at that particular time, the result of recent attempts to create a theory neutral definition of ‘wholly present’ is a definition that is manifestly not a part of the standard common sense endurantism that I have described.

I suspect that David Lewis’ allegedly theory neutral account of persistence is partly to blame for this popular conception of what everyone agrees to. Lewis suggests that what everyone can agree to is that “something persists *iff*, somehow or other, it exists at various times” (1986: 202). There are two things to note about this definition. On the one hand it contains the phrase ‘somehow or other’, which does seem to leave it open in what way things exist at various times. On the other hand Lewis’ use of the predicate ‘exists’ may be understood tenselessly, which would imply that persistence is on all accounts a matter of multiple localisation in time. Indeed, having Lewis’ claim in mind that other times are just like other places, and exist in the same way, this reading comes naturally (1986, pp. 2-3). On this reading the problem of multiple localisation is whether there can be a one-to-many relation between a thing and times (wholly and multiply located), or if the one must be reduced to a set of parts that hold one-to-one relations to times (multiply located compound whose parts are singly located). Indeed, this is exactly how Lewis discusses the alternatives.

Regardless of who’s to blame for misunderstandings about what everyone can agree to, then we must ask whether it would help Mellor’s and Simons’ position to assume that they do not copy my ‘mistake’ of confusing ‘wholly present’ with ‘singly located’, but indeed think that to be ‘wholly present’ is to be ‘multiply wholly present’. I don’t think it helps, because there is still enough problems involved in making intelligible the idea that a single thing could be multiply ‘wholly present’ at various times in the way required by temporal parity, i.e. that

the thing coexists with itself in all these locations, without invoking the charge of contradiction, *visavi* the problem of temporary intrinsics, if one assumes the thing has incompatible properties at those various times. Consequently, ‘multiply wholly located’ appears to be a conception that manages to be both unintuitive and subject to all previous charges of contradiction levelled at endurantism. In comparison, endurantism proper is ‘merely’ potentially contradictory (pending on the question whether temporal passage is contradictory) but intuitively appealing. Perdurantism, on the other hand, is clearly coherent but unintuitive.

7. Conclusion

It is my conclusion that neither Mellor nor Simons provide adequate explanations of how things can endure in tenseless time, at least for the purposes of grounding the reality of change. To my mind, this failure is an unavoidable consequence of the fact that endurantism is incompatible with the principle of temporal parity. Nothing can exist exclusively at each moment of a series of times in the sense required by endurantism, and coexist at all of them in the way required by temporal parity. I think neither thinker is adequately aware of just how strong the restrictions of the temporal parity thesis are for their metaphysical endeavour.

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