

A Limited Defense of Passage

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## A LIMITED DEFENSE OF PASSAGE

Steven F. Savitt

### I. LIMITATIONS

Controversy over the existence of passage (the flow of time, time's transitory aspect) reaches back at least to Heraclitus and Parmenides and continues unabated. Stating the crux of the controversy has, nevertheless, proved to be frustratingly difficult. Indeed, the first limitation of this defense of passage is that it will not include a precise criterion that distinguishes philosophical accounts of time that embrace passage from those that do not. While acknowledging that the lack of a way to distinguish passage from nonpassage views haunts the debate, it does seem as if there is a deep metaphysical difference between the two sorts of views, however difficult it is to distill, and the following discussion will proceed on the assumption that there is such a difference.<sup>1</sup>

A second limitation is that this defense will focus on just one argument that purports to show that passage is impossible, McTaggart's famous argument that time is unreal.<sup>2</sup> This argument has been exceedingly, perhaps even excessively, prominent in the time literature in the twentieth century.<sup>3</sup>

In fact (third limitation), the focus will be on only one version of McTaggart's argument, that of D. H. Mellor in his recent

book on the metaphysics of time, *Real Time II*.<sup>4</sup> Mellor's lucid and powerful presentation of this argument in *Real Time* and *Real Time II* has been very influential. If the argument below succeeds in showing that (and how) his version of the argument fails, it should be easy to see that the same sort of flaw infects other versions.<sup>5</sup>

Finally, we shall assume for the purpose of this discussion an ontology of instantaneous events in the fixed, four-dimensional background spacetime structure of classical mechanics, and we shall further assume that all instantaneous events belong to equivalence classes determined by the binary relation "is simultaneous with" and completely ordered by the binary relation "is earlier than" (or by its converse "is later than"). Without meaning to take sides in the long-standing debate between spacetime substantivalism and relationalism, we shall refer to the equivalence classes of events as *times* or *moments*.

It may be that other spacetime structures (like Minkowski spacetime) are at least as important for the metaphysics of time and that discussions of passage in these structures are even more interesting than in the classical case. For the limited purposes of this paper, one need merely register that most discussions of McTaggart's argument

presuppose (usually tacitly) classical spacetime structure. It is important to see that the argument fails even in its natural setting, without adding to confusion by invoking the peculiarities of other spacetime structures.

## II. DEFENSE

### According to McTaggart

Positions in time, as time appears to us *prima facie*, are distinguished in two ways. Each position is Earlier than some and Later than some of the other positions. . . . In the second place, each position is either Past, Present, or Future. The distinctions of the former class are permanent, while those of the latter are not. If M is ever earlier than N, it is always earlier, But an event, which is now present, was future, and will be past.<sup>6</sup>

The first structure of "positions in time" McTaggart called the *B-series*. Presumably, McTaggart intended the B-series to coincide (roughly) with the classical spacetime structure invoked above. McTaggart noted that there was something static or "permanent" about the B-series. That an event  $e_1$  is earlier than event  $e_2$ , if indeed it is earlier, is a relation between those two events that does not alter.

Since the B-series seemed inadequate to capture the dynamic aspect of temporal passage or flow, McTaggart introduced the monadic predicates past, present, and future, which Mellor conveniently abbreviates as P, N (for Now), and F. The properties indicated by these predicates are not static or permanent; the events that bear these properties are constantly changing with respect to them. That is, an event which is future becomes less and less future until it becomes present, immediately after which it becomes ever more increasingly past. The positions in time, when ordered by (the degrees of) pastness, presentness, and (the degrees of) futurity are called the *A-series*. Passage requires the A-series and

the A-properties, according to McTaggart and Mellor, in addition to the B-series and its unchanging relations.

But McTaggart and Mellor argue that the A-theory of time, the view that takes seriously the modeling of passage by events constantly changing their A-properties, can be shown to entail a contradiction. What that contradiction is supposed to be shall be shown shortly. First, let us note that a contradiction is a pair of sentences like

(1)  $\Phi$

and

(2)  $\sim\Phi$ ,

where ' $\sim$ ' is the logical operator for negation and is to be read "it is not the case that" and where the same sentence replaces the sentence variable  $\Phi$  in both occurrences. For example, the sentences

(3) David is at the bank

and

(4) It is not the case that David is at the bank

form a contradiction if the same sentence "David is at the bank" is used in both. If in (3), however, one means by "bank" the bank of a river, where David is fishing, and in (4) one means by "bank" a local financial institution where David is employed and supposed to be working, then there is no genuine contradiction. The ambiguity of "bank" (in this case) shows that, despite superficial appearances, the same sentence is not substituted in (1) and (2). Both sentences (3) and (4) may be true (or false) together.

With this apparently innocuous point in hand, let us turn to the core of McTaggart's argument, as Mellor sees it.

Then McTaggart's basic argument is that while the three times P, N and F are mutually incompatible, so that

(5)  $Pe \models \sim Ne$ ;  $Ne \models \sim Fe$ ;  $Fe \models \sim Pe$ ; etc., the flow of time requires every event to have all three of them, i.e.,

(6) Pe & Ne & Fe.

But (5) and (6) cannot both be true, since if (6) is true, two of the entailments in (5) fail, making (5) false. But our A-concept of time commits us to both (5) and (6); so it entails a contradiction and cannot apply to reality. In reality therefore time cannot flow, because there can be no A-facts. (73–74)

To be quite explicit about Mellor's argument, if our A-concept of time commits us to (6), then for some event *e*, we are committed to both Ne and Pe (as well as Fe). Hence, for that event *e*

(7) Ne.

But our A-theoretic concept of time also commits us to (5), in which '=' indicates logical entailment and from which, with the addition of Pe, we can derive

(8) ~Ne.

Since (7) and (8) form a contradiction, the argument goes, the A-theory "cannot apply to reality." And since, as Mellor remarks later, "For time to flow is for events, B-facts and B-times to have A-times that change from future to present to past," (84) time cannot flow.

For ease of logical manipulation, abbreviating expressions in a canonical notation is convenient and perhaps essential. But in order to evaluate the contradiction that the A-theory of passage allegedly engenders, let us unabbreviate (7) and (8) into

(7') *e* is present

and

(8') It is not the case that *e* is present.

While these two sentences look like a contradiction, they are in reality a contradiction, as noted above, only if the negated sentence in (8') is the same as that in the sentence (7'). This identity, in turn, requires that all terms be used unambiguously in (7') and (8'). Are they? In particular, is the copula "is" univocal in these two sentences?

Let us begin by supposing that the copula is just the ordinary tensed verb that might appear in the following interchange:

(9) Is it raining?

(10) Yes, it's raining.

It seems, at least, that there is such an ordinary tensed sense of the copula; and if there is and if it is the sense of the copula in both (7') and (8') and if there are no other ambiguities, then (7') and (8') are indeed a contradiction. Moreover, if one reads all the abbreviated sentences using the copula in this sense, then the A-theory would seem to entail all the sentences in (5). If an event is present, for instance, it surely is not past, and so on.

But why would one suppose that the A-theory is committed to (6)—continuing of course to read the copula in the ordinary tensed sense, as one must if a genuine contradiction is to be derived? No A-theorist ever *intended* to assert that any event is (in the ordinary, tensed sense of the copula) currently present and past and future. No reason has been given to suppose that the A-theory is willy-nilly committed to holding that some event *e* is (again, in the ordinary, tensed sense of the copula) future, present, and past. But if the A-theory is not committed to (6), then the sample inference above from (7') to (8') fails at its first step. An A-theorist can affirm (7') without being committed to affirming (8'), at least in the sense of the copula indicated. So far the A-theory has not been mugged by a contradiction, and no similar contradiction seems to be lurking in the bushes.

Mellor is prepared for this well-worn gambit. He imagines (in §3 of chapter 7) a series of responses to his version of McTaggart's argument, including the one just rehearsed. In response to it, he denies that the copula in the displayed sentences above is used in the present tense. It is rather, a tenseless copula, in which case,

he says, "McTaggart's proof is restored at once." (77)

We shall soon look into this claim, but first let me emphasize that the current argument does not advance a view as to just what sort of copula is being used in (5), (6), (7'), and (8'), nor does it rely on a view as to what sorts of copula there are. In a sympathetic reconstruction of McTaggart's argument one must be inclusive with respect to copulas or senses of the copula, since restricting senses of the copula clearly, but perhaps unfairly, limits ways in which Mellor or others inspired by McTaggart might try to derive a contradiction from the A-theory. If one admitted only a tensed copula, for instance, the argument would end here. Though this stance with respect to senses of the copula may seem wishy-washy, one basic point is firm—that whatever sense of the copula be at issue, it must be the same one that appears in both sentences in pairs like (7') and (8') if there is to be a real rather than an apparent contradiction entailed by the A-theory.

Let us suppose, then, that there is a tenseless copula, and let us indicate that we are using it rather than the ordinary, tensed copula by writing it as 'BE'. So, for instance, we might contrast

(11) It is raining.

with

(12) Seven BE prime.

Mellor tells us that 'BE' "adds no temporal information and is present only to give the sentences a verb, however vacuous." (77) Mellor's tenseless copula is to be understood as a copula shorn of temporal commitments, just as the usual copula lacks spatial commitments.<sup>7</sup> In this case, "It BE windy at *t*" is just as informative about the time of the wind (but not the place) as "It BE windy in Chicago" is in-

formative about the place of the wind (but not the time).

Given only this minimal characterization of 'BE', it is difficult to evaluate sentences like "e BE present" and "e BE past." It is tempting to think that the predicate restores precisely the temporal information subtracted from the copula, but then "e BE present" and "e BE past" amount to alternative ways of writing "e is present" and "e is past." If the remarks above on the tensed copula are cogent, then since there is no reason to suppose that A-theorists are committed to (6), there is no reason to suppose that A-theorists are committed to the alternative version

(6') e BE past & e BE present and e BE future.

No contradiction is yet restored.

Perhaps Mellor thinks of his detensed or detimed copula in a different way. Consider, for instance, the reason he says the A-theory is committed to (6), that "because each event is always changing its A-times, it has to have them all"<sup>8</sup> (73). The plausibility of this claim, it seems, rests on something like the following line of thought, however well or poorly defined. Each event is at *some* time past, at *some* time present, and at *some* time future, according to the A-theory. Therefore, each event has at some time or other (or HAS, in some timeless fashion) all A-properties—past, present, and future. This line of thought then suggests that one understand Mellor's detensed or detimed copula as implicitly involving existential quantification, so that "e BE present" means (for example) there is a time at which e is present and "e BE past" means that there is a time when e is past.<sup>9</sup> On this understanding of 'BE', (6') seems to follow from the A-theory.

If 'BE' is understood in this existentially quantified sort of way in order to give credibility to (6'), however, there is then clearly no conflict between

(13) e BE past  
and

(14) e BE present,  
since the value of  $t$  for which (13) is true need not be the value of  $t$  for which (14) is true,<sup>10</sup> and hence (13) does not imply the negation of (14). On this understanding of ‘BE’, then, the A-theory is *not* committed to

(5') e BE past =  $\sim$ (e BE present); e BE present =  $\sim$ (e BE future); etc.

If the A-theory is committed to (6') but not (5'), then (again) no contradiction has been demonstrated to follow from it.

One might think that (5') does follow because Mellor says that he *defines* the A-properties so that they exclude one another. And, indeed, he does do so (in §2 of chapter 1). He uses “event” for temporally extended as well as instantaneous events, and he says that an event is present if it includes the present moment, past if it does not include but does precede the present moment, etc. Then he notes that these definitions stop

any A-time being both present and past, or present and future, by making present A-times include the present moment, and past and future ones exclude it. So nothing that has an A-time can ever be both present and past, or present and future. Its A-time at any given time either includes the present moment, making it present, or it does not, making it past or future. (10)

It is the phrase “at any given time” in the final sentence of this quote that suggests that one must understand Mellor’s definitions as stipulating that

(15) e BE present at  $t$  =  $\sim$ (e BE past at  $t$ ), etc.

Is it legitimate to build this stipulation regarding the A-properties into what is introduced as a copula shorn of temporal information? Since it’s Mellor’s copula, let us suppose that he can stipulate as he

chooses. Having stipulated (15), however, he is then required to supply—if we are to have McTaggart’s contradiction restored—some argument that in precisely this sense of the copula (with his stipulation and with processes as well as instantaneous events being possible values for e) A-theorists are required to accept

(16) e BE past at  $t$  & e BE present at  $t$  & e BE future at  $t$  (for some value of  $t$ ).

No argument at all has been provided to show that A-theorists must accept (16).<sup>11</sup> A-theorists *may* be constrained to acknowledge that, for some chosen event e, e BE past, e BE present, and e BE future;<sup>12</sup> but since Mellor’s ‘BE’ is to be understood as temporally neutral, it is difficult to see how the former claims could commit one to any of the conjuncts of (16). If so, no contradiction has been restored.

Mellor’s proposed tenseless copula does not serve to restore McTaggart’s (alleged) contradiction. We must not, however, confine ourselves to this one proposal. If there is *any* tenseless reading of the copula in which a contradiction follows from the A-theory, then that theory must be abandoned. So let us look at some alternatives to Mellor’s proposal.

One might propose, for instance, that

(17) e BE<sub>N</sub>  $\Phi$   $\equiv$  e is  $\Phi$  or e was  $\Phi$  or e will be  $\Phi$ .<sup>13</sup>

Since the *definiens* of this tenseless copula contains only the ordinary tensed copula and disjunction, an A-theorist could scarcely object to it. It is true, moreover, in this sense that for every e, e BE<sub>N</sub> present and e BE<sub>N</sub> past and e BE<sub>N</sub> future. In this sense, again, the analog of (5') clearly fails, and no contradiction has been restored.

One might wish to revisit the existentially quantified sense of BE discussed above, since the sentence ‘ $(\exists t)(e$  is  $\Phi$  at  $t$ )’ does not seem to express what one intends to express if the “is” is understood as

tensed. Although  $t$  points to some arbitrary time, the copula remains in the present tense. The open sentence in the scope of the existential quantifier seems to say literally that  $e$  is now  $\Phi$  then, which makes little sense. To avert this divergence of verb and variable, one might use Sellars's neutral tenseless copula to propose that

$$(18) e \text{ BE}_3 \Phi \equiv (\exists t)(e \text{ be } \Phi \text{ at } t),$$

or one might use Mellor's de-tensed copula to propose that

$$(19) e \text{ BE}_3 \Phi \equiv (\exists t)(e \text{ BE } \Phi \text{ at } t).$$

For each of these cases, the analogs of (6) are true, but the analogs of (5) are not. Neither generates a McTaggart-style contradiction.<sup>14</sup>

Given a tenseless copula, it does begin to look as if the A-theory typically entails (6), suitably interpreted. So for any event  $e$ , it does seem as if A-theorists might be impelled to endorse some version of

$$(6') e \text{ BE past} \ \& \ e \text{ BE present} \ \& \ e \text{ BE future}.$$

Much of the literature concerns attempts by A-theorists to wriggle out of contradiction by avoiding commitment to (6') by arguing, as Mellor puts it, that "nothing has incompatible A-times at the same time." (73) He shows that, even if this strategy succeeds in evading the contradiction sketched above, a similar contradiction is generated at the level of once-compounded tenses. If a similar attempt is made to avoid this new contradiction, then it can be reformulated at the level of twice-compounded tenses. And so on.

One need not become embroiled in the dialectical complexities surrounding this regress if one denies that there is a genuine contradiction at the first or basic level. This denial usually comes down to an attempt to evade (6'). The point of this argument is that, for those tenseless senses of 'BE' in which the A-theory *is* committed

to (6'), it is no longer clear that the A-theory entails

$$(5') e \text{ BE past} \equiv \sim(e \text{ BE present}); e \text{ BE present} \equiv \sim(e \text{ BE future}); \text{ etc.},$$

where 'BE' is the same tenseless copula used in (6').<sup>15</sup>

There is one exception. Sentence (12) suggests a universally quantified rather than an existentially quantified sense of 'BE'—that "seven BE prime" might be taken to mean (or entail) that seven be prime at all times. Then on this reading (6') means or entails that every event has every A-property at all times, making the A-theory not even *prima facie* plausible as an account of change. Arguably, no A-theorist ever intended to be committed explicitly or implicitly to this view, and there is no argument that they are so committed.

If 'BE' is clearly described and if one is careful in drawing inferences to and from sentences employing it, then perhaps some such nontensed copula can be used to state a contradiction entailed by the A-theory. If any such copula is detensed enough that (6') can be made plausible, however, (5') will not be plausible. And one must of course be on guard against shifting back to one of the quantifier-linked understandings of 'BE' (or to some yet other nontensed copula) in the course of an argument, if one is to derive a genuine rather than a merely apparent contradiction from the A-theory.

A reason sometimes given for believing that the A-theory is committed to (5') is that past, present, and future are same-level determinates of a determinable time, and hence are incompatible, just as red and white, being same level determinates of the determinable color, are incompatible. While this line of thought seems to sidestep the problems with the copula raised above, it does not in fact do so. It is possible for something (the Canadian flag, for instance) to be both red and white at a given

time. Of course, there is no one point in space (on the Canadian flag) that is both red and white at the given time, and in that sense red and white are incompatible. Similarly, there is no event or time, according to the A-theory, which is both present and future, but we have seen that this fact is not decisive. What is crucial is whether some one event or time can or cannot BE both present and future, just as the Canadian flag can be red and white. This line of argument (from the A-theory to (5') via the determinable/determinate distinction) depends upon the articulation of a sense for 'BE' in which it has force and for which (6') also holds.

Let me summarize the overall argument. Opponents of the A-theory have, following McTaggart, argued that it entails a contradiction. The considerations above have tried to show, by attending carefully to the copula implicit in sentences like (7) and (8), that no contradiction has been exhibited. Using the tensed copula, the A-theory is committed to (7) but not (8), for instance, because it is committed to (5) but not (6). Use of the nontensed copula typically commits one to (6') but not (5'), blocking the derivation of a contradiction at another point. When McTaggart's (and Mellor's) argument is rendered valid by using one nontensed copula consistently throughout, it is not sound.

It is an advantage of my argument that it suggests why there is such a persistent appearance of contradiction. If one uses "is" for both forms of copula or simply omits the copula from one's notation, then one can easily derive (7) and (8) from the ostensible commitment of the A-theory to (5) and (6) without ever noting that apparently contradictory sentences like

(14) e BE present  
and

(20) ~(e is present)

are no more contradictory than (3) and (4).

We could adopt as a general conclusion, then, some (slightly amended) remarks made by Jordan Howard Sobel concerning his persuasive dissection of the equivocations that fuel arguments for logical fatalism:

The air of soundness of [McTaggart's argument] derives, I think, entirely from the ease and seductiveness of [the] pattern of equivocation [proposed above]. We are in general charitable in our interpretations and disposed to make the best of what we hear and read, as well as of what we say and think. This is essential for efficient communication, and a good habit in ordinary life. But making the best of what we read and hear can lead to shifts in interpretations as one entertains argument. That charity which is a virtue in ordinary life needs to be exercised with restraint especially in philosophy, wherein paths of more or less subtle equivocation to startling conclusions are not uncommon.<sup>16</sup>

A second advantage of my argument is that it puts the burden of proof back where it belongs, on the shoulders of those who would prove that the A-theory is contradictory. To vindicate McTaggart they need only specify one clear sense of the copula in which the A-theory is committed to both (5) and (6), or to (5') and (6'). I have not been able to find one, but that is no proof that none exists. All that is required to clinch the case against the A-theory is to exhibit one.

So it is an initial disadvantage of my argument that, if it is incorrect, it should be easy to prove that it is incorrect. If time passes and no refutation appears, the initial disadvantage may be converted to another advantage.

### III. OFFENSE

Lest the intention behind the argument offered above be misunderstood, it may prove helpful to append a few remarks, all of which would need a more extended defense than can be provided here.



First, while the discussion above made free use of the customary expression *the A-theory*, this expression is ambiguous. It is often used in a wide sense to indicate any passage-affirming view of time, while in a narrower sense it indicates any pro passage view that tries to explain, understand, or model the passage of time as a kind of qualitative change. Conflation of these two senses leads to the idea that refutation of the narrow view by McTaggart's attempted *reductio* suffices to put paid to passage itself. The upshot of the argument above is that the failure of McTaggart's argument leaves both sorts of A-theory intact.

Second, in spite of the above defense of the view, the narrow A-theoretic account of passage is not philosophically illuminating. It requires passage to be understood as like qualitative change, but qualitative change requires in turn that that which changes persists through the change—that is, persists through time. It may be that too much of time is presupposed by the A-theoretic account. Moreover, the instantaneous events that compose the usual ontology assumed in discussions of McTaggart are not good candidates for persistence. Defenders of passage should either look to

other ways to model passage or, following Broad, take it as a primitive notion.<sup>17</sup> A century spent evaluating the relative merits of the A-series and the B-series has, in my view, yielded meager understanding of time at least in part because it has not been widely enough recognized that passage does not fall with the narrow A-theory.

Third, the classical spacetime structure assumed throughout this paper has been superseded by other spacetime structures. What is coherent and plausible in classical spacetime may look less attractive in Minkowski spacetime, for instance. Vindication of the A-theory or any kin in classical spacetime would be only a small step to a thorough defense (or exorcism) of passage.

Finally, in addition to the suggestion that it would be fruitful to proliferate views or accounts of passage, it might also be helpful to spend some effort on rendering precise the distinction between passage and nonpassage views.<sup>18</sup> Clarification of this fundamental point might prove to be what is needed to make philosophical discussions of passage in the twenty-first century more productive than they have been in the twentieth.<sup>19</sup>

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## NOTES

I wish to acknowledge the support of the Social Sciences and Humanities Research Council of Canada for this research.

1. Clifford Williams, in "The Metaphysics of A- and B-Time," *Philosophical Quarterly* (1966), pp. 371–81, expresses some reasonable doubts about this assumption. I address this question directly in "Absolute Becoming and the Myth of Passage" (unpublished).

2. The argument first appeared in J. M. E. McTaggart's "The Unreality of Time," *Mind*, new series, no. 68 (October 1908). A later version of this argument appears as chapter 33 in McTaggart's *The Nature of Existence*, vol. 2 (Cambridge: Cambridge University Press, 1927).

3. For a guide to the earlier literature see the papers in section 2 of Richard Gale's collection *The Philosophy of Time* (New York: Humanities Press, 1968) and the bibliography for that section.

For a sample of more recent papers see part 2 of L. Nathan Oaklander and Quentin Smith's *The New Theory of Time* (Yale University Press, 1994).

4. D. H. Mellor, *Real Time II* (Routledge, 1998). Page and section references in the text will be to this book. *Real Time II* is a reworking of Mellor's earlier book *Real Time* (Cambridge: Cambridge University Press, 1981).

5. Except for the version of the argument developed by Michael Dummett in "A Defense of McTaggart's Proof of the Unreality of Time," which first appeared in *Philosophical Review*, vol. 69 (1960), pp. 239–58, and is reprinted in *Truth and Other Enigmas* (Harvard University Press, 1978). Dummett argues that temporal phenomena require the use of token-reflexive expressions and that this necessity conflicts with the appealing idea that there can be a complete description of reality.

6. *The Nature of Existence*, vol. I2, pp. 9–10.

7. Following, for instance, Quine, who introduced a tenseless copula in *Word and Object* (Cambridge, Mass.: MIT Press, 1960) thus: "We may conveniently hold to the grammatical present as a form, but treat it as temporally neutral" (p. 170).

8. Unless time has either a beginning or an end. I shall hereafter omit this qualification, which is necessary for technical correctness but distracts from the main argument.

9. This seems to be explicitly the way the tenseless copula is understood in Robin Le Poidevin's *Change, Cause and Contradiction: A Defence of the Tenseless Theory of Time* (New York: St. Martin's Press, 1991), p. 14.

10. In fact, on this reading (13) and (14) do not imply that e BE past and present, making this sense of the nontensed copula rather weak.

11. There also may be a temptation to think that "e BE present at t" (for some value of t) entails "e BE present," etc., (but why need an A-theorist accept this?) so that one can again derive (6'). But (again) it is not clear that a contradiction follows, since no A-theorist is committed on this understanding of BE to (5'), which is, of course, distinct from the stipulated (15).

12. As I have indicated, for instance, with the existentially quantified sense of 'BE.'

13. I propose to keep track of some of the various tenseless copulas to be introduced by subscripting them. The tenseless copula understood as in (16) is related to the "neutral" tenseless copula "be" introduced by Wilfrid Sellars in the context "x be  $\Phi$  at t" as "Either x was  $\Phi$  at t or x is  $\Phi$  at t or x will be  $\Phi$  at t," where the underlined verbs are tensed. See §3 of "Time and the World Order" in *Minnesota Studies in the Philosophy of Science*, vol. 3, ed. Herbert Feigl and Grover Maxwell (Minneapolis: University of Minnesota Press, 1962). It is easy to see that no McTaggart-style contradiction is generated by Sellars' copula.

14. Michael Tooley, in §6.2 of *Time, Tense, and Causation* (Oxford University Press, 1997) suggests that the noncommittal (19) is superior to the Sellarsian (18) because the former sort of existential quantifier is equally applicable to temporal and nontemporal entities and assertions of existence, in his view, are univocal over these two categories.

15. This last step of the argument is what has been lacking in previous objections to McTaggart's argument that distinguish tensed from nontensed copulas. Compare my treatment, for instance, with that of J. R. Lucas, "A Century of Time" in Jeremy Butterfield's *The Arguments of Time* (Oxford: Oxford University Press, 1999), pp. 1–6.

16. Jordan Howard Sobel, *Puzzles for the Will: Newcomb and Samarra, Determinism and Omniscience* (Toronto: University of Toronto Press, 1998), p. 42

17. One paper comparing models of passage is “Four Kinds of Temporal Becoming” by Paul Fitzgerald in *Philosophical Topics*, vol. 13 (1985), pp. 145–77.

18. While not exactly to this point, two recent papers have proposed a similar necessary condition for a spacetime to admit passage: “The Replacement of Time” by Steven F. Savitt in *Australasian Journal of Philosophy*, vol. 72 (1994), pp. 463–74, and “Time, Quantum Mechanics, and Tense” by Simon Saunders in *Synthese*, vol. 107 (1996), pp. 21–53.