

IN DEFENSE OF THE COMPOSSIBILITY OF PRESENTISM AND TIME TRAVEL

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ABSTRACT: In this paper I defend the compossibility of presentism and time travel from two objections. One objection is that the presentist's model of time leaves nowhere to travel to; the second objection attempts to equate presentist time travel with suicide. After targeting some misplaced scrutiny of the first objection, I show that presentists have the resources to account for the facts that make for time travel on the traditional Lewisian view. In light of this ability, I argue that both of the objections fail.

KEYWORDS: presentism, time travel, nowhere argument, suicide machine argument

1. Introduction

Presentism is a thesis about temporal ontology according to which it is necessarily the case that only present entities exist.¹ Many philosophers have said that presentism precludes the possibility of time travel. For example, William Grey has said that the possibility of time travel would have to “presuppose that the past or future were somehow real,”² and Steven Hales has said that “there is no such thing as time travel under presentism.”³ In addition, several philosophers have endorsed the view that time travel is possible only if eternalism (sometimes called ‘four-dimensionalism’) is true – the view that past, present, and future entities all exist on an ontological par. William Godfrey-Smith, for example, has said that “the metaphysical picture which underlies time travel talk is that of the block

¹ There is some variation in how presentism is formulated. Some authors add that *it is always the case that* everything is present (e.g. see Thomas M. Crisp, “Presentism,” in *The Oxford Handbook of Metaphysics*, eds. Michael J. Loux and Dean W. Zimmerman (Oxford: Oxford University Press, 2003), 215), and others add that *the only properties and relations that present entities instantiate are those they currently instantiate* (e.g. see Theodore Sider, “Traveling in A- and B- Time,” *The Monist* 88, 3 (2005): 329). Also, some authors do not (explicitly) formulate presentism as a metaphysically necessary thesis. Nothing in this paper will turn on such variation. For defenses of presentism, see Crisp, “Presentism;” Ned Markosian, “A Defense of Presentism,” in *Oxford Studies in Metaphysics, Volume I*, ed. Dean W. Zimmerman (Oxford: Oxford University Press, 2003); and Craig Bourne, *A Future for Presentism* (Oxford: Oxford University Press, 2006).

² William Grey, “Troubles with Time Travel,” *Philosophy* 74, 1 (1999): 56.

³ Steven Hales, “No Time Travel for Presentists,” *Logos & Episteme* 1, 2 (2010): 360.

universe,”⁴ and Ken Perszyk and Nicholas Smith agree that “[f]or time travel to be possible, we need a different conception of time: four-dimensionalism.”⁵ Although there have been a few dissenters,⁶ this appears to be the common view.

The aim of this paper is to join the dissenters and show that the common view isn’t any good. Towards this end, I will evaluate two arguments that purport to show that presentism rules out the possibility of time travel: the Nowhere Argument (§2) and the Suicide Machine Argument (§3). After exposing some misplaced scrutiny of the first argument, I will ultimately respond to the arguments on behalf of the presentist.⁷

2. The Nowhere Argument

Simon Keller and Michael Nelson dub the following argument the ‘Nowhere Argument:’

On the presentist model, the past and the future do not exist, so there is nowhere for the time traveller to go. Travelling to Portland is possible, because Portland is right there waiting for you. But travelling to the Land of Oz is impossible, because there is no such place. Travelling to the past or future is more like travelling to the Land of Oz, if presentism is true. You can’t travel to somewhere that doesn’t exist, so, if presentism is true, you can’t travel to other points in time.⁸

⁴ William Godfrey-Smith, “Travelling in Time,” *Analysis* 40, 2 (1980): 72.

⁵ Ken Perszyk and Nicholas Smith, “The Paradoxes of Time Travel,” in *Maui and the White Rabbit: Maori and Pakeha Concepts of Time*, ed. Hamish Campbell (Te Papa: National Museum of New Zealand Press, 2001), 4.

⁶ See Simon Keller and Michael Nelson, “Presentists Should Believe in Time Travel,” *Australian Journal of Philosophy* 79, 3 (2001): 333-45; Paul Daniels, “Back to the Present: Defending Presentist Time Travel,” *Disputatio* 4, 33 (2012): 469-84; and Ryan Wasserman, *The Paradoxes of Time Travel* (manuscript).

⁷ One noteworthy restriction. I will only be concerned with *closed-future* presentism – that is, presentism plus the view that future-tensed contingent statements are either determinately true or determinately false. Kristie Miller has argued that time travel is incompatible with *open-future* presentism – that is, presentism plus the view that future-tensed contingent statements are neither determinately true nor determinately false. See Kristie Miller, “Time Travel and the Open Future,” *Disputatio* 1, 19 (2005): 223-32; and Kristie Miller, “Backwards Causation, Time, and the Open Future,” *Metaphysica* 9, 2 (2008): 173-91. For a response to Miller, see Daniels, “Back to the Present.”

⁸ Keller and Nelson, “Presentists Should,” 334-5.

Initially the argument is quite compelling.⁹ However, we should take a closer look:

THE NOWHERE ARGUMENT

(P1) If presentism is true, then necessarily, the past and future do not exist.

(P2) It is impossible to travel somewhere that does not exist.

(C1) If presentism is true, then it is impossible to travel to the past or future.

(P3) If time travel is possible, then it is possible to travel to the past or future.

(C2) If presentism is true, then time travel is impossible.

The first premise goes analytic if by ‘the past and future’ we have in mind concrete temporal locations. Although presentists may believe that all *abstract* times – plausibly thought of as maximal consistent propositions – exist in the present, they will claim that only one of these propositions is true, and moreover, it is the one and only *concrete* time that makes it so.¹⁰ And it is surely the concrete conception of times at work in the Nowhere Argument, for I doubt it makes much sense at all to speak of traveling to a proposition. So only (P2) and (P3) are up for grabs. The rationale for (P2) can be put as follows: *traveling* is a two-place relation, one that holds between a traveler and a destination. Given the general principle that no relation can hold without coexisting relata, it follows that no one can travel to a nonexistent destination. The rationale for (P3) is presumably intuitive: in order to travel in time, one must travel to the past or future. Given these rationales, the argument naturally progresses as follows. In cases of *time* travel, the destination relatum would be a concrete time.¹¹ But, if presentism is true, there are no nonpresent concrete times. As such, presentism entails that traveling to the past or future is impossible because (i) no past or future concrete times exist according to presentism, and (ii) the *traveling* relation cannot hold with respect to the nonexistent.¹² From here, the second conclusion comes easy:

⁹ The Nowhere Argument goes back (at least) to Grey, “Troubles,” 56-7, and is endorsed (among others) by Grey, “Troubles;” Perszyk and Smith, “The Paradoxes;” and Peter Eldridge-Smith, “Paradoxes and Hypodoxes of Time Travel,” in *Art and Time*, eds. Jan Lloyd Jones, Paul Campbell, and Peter Wylie (Melbourne: Australian Scholarly Publishing, 2007).

¹⁰ On the abstract-/concrete-time distinction see Markosian, “A Defense,” 32-3.

¹¹ It is popular to identify concrete times with three-dimensional hyperplanes of spacetime or maximal mereological sums of contemporaneous concreta. For my purposes, however, it won’t be necessary to endorse any particular account.

¹² As I have described it, the Nowhere Argument is an instance of the familiar problem of cross-time relations. There is a considerable amount literature on this topic. For some useful discussion, see Roderick Chisholm, “Referring to Things That No Longer Exist,” *Philosophical*

since time travel surely requires traveling to the past or future, and presentists cannot allow for such travel, presentism entails the impossibility of time travel.

2.1. Against Objections to the Second Premise

Unfortunately, many philosophers have focused their scrutiny on (P2) of the Nowhere Argument. In this section, I will consider – and reject – two popular ways of objecting to this premise. The more common way of fleshing out this objection is with a simple reductio: if (P2) is true, then the argument rules out too much: the ordinary passage of time.¹³ This is supposedly because the passage of time involves persisting objects traveling to the immediate future, which (according to presentists) is just as nonexistent as the distant past. This is a bad objection. Presentists will not equate ordinary persistence with *traveling* to the immediate future. To see why, we need to understand what presentists say the passage of time consists in.

Presentism is a version of the A-theory of time – the view that tensed statements are irreducible, typically in the sense that tensed sentence tokens cannot be given tenseless truth conditions.¹⁴ In order to express tensed truths, presentists traditionally utilize primitive tense operators (e.g. WAS, WILL) that attach to present-tensed sentences. For example:

- (1) WAS (There are dinosaurs)

According to A-theorists, tensed statements like (1) change their truth value over time. For example, (1) is true now, as it was a thousand years ago. But 1 billion years ago, (1) was false. This is what the passage of time for presentists (*qua* A-theorists) consists in – the *constant and inexorable* change in the truth values of

Perspectives 4 (1990): 546-56; Theodore Sider, "Presentism and Ontological Commitment," *Journal of Philosophy* 96, 7 (1999): 325-47; Markosian, "A Defense;" Thomas Crisp, "Presentism and 'Cross-Time' Relations," *American Philosophical Quarterly* 42, 1 (2005): 5-17; and Bourne, *A Future*, 95-108.

¹³ For endorsements of this objection, see Phil Dowe, "The Case for Time Travel," *Philosophy* 75, 3 (2000): 443; Keller and Nelson, "Presentists Should," 335; Sider, "Traveling," 329; and Daniels, "Back to the Present," 472.

¹⁴ In particular, A-theorists resist the reduction of tense to times. Those that endorse this reduction (i.e. B-theorists) would say that an utterance of 'there were dinosaurs' expresses a truth if and only if there exists some time *t* such that (i) there are dinosaurs at *t*, and (ii) *t* is earlier than the time of utterance. For more on this detensing strategy, see Theodore Sider, *Four Dimensionalism: An Ontology of Persistence and Time* (Oxford: Oxford University Press, 2001), 11-25.

tensed propositions.¹⁵ This makes the phenomenon of ordinary persistence quite different from *traveling* to the immediate future. After all, traveling essentially consists in a change of relations to external objects, but “keeping flow” with the passage of time on this conception does not, for the continuation of the successive process by which the truth values of tensed propositions change is not dependent upon any objectual change in external relations.¹⁶ On presentism, therefore, ordinary persistence does not amount to anything like traveling. (P2) thereby poses no threat to the passage of time, and so this first objection fails.

Other philosophers have rejected (P2) on different grounds; they claim that one can travel to a nonexistent place *as long as it exists upon arrival*.¹⁷ Here is one example involving spatial travel to a nonexistent location, due to John W. Carroll:

Suppose you are a big fan of amusement parks and hear that they are planning to build a new one in Argentina. It doesn't exist yet, but you are so excited that you start now to hitchhike your way there from Raleigh, NC. It seems that you are traveling to the amusement park even though it doesn't exist. What seems important is not that the destination exists when you start to travel, but that it exists when you arrive.¹⁸

The case is unpersuasive. A more accurate description would go like this: you start to travel to some *existing* place – Argentina – which is such that it *will* be the case that when you arrive there, it contains an amusement park. We can preserve the original intuition by saying that an utterance of ‘I'm traveling to the amusement park in Argentina’ expresses something like a “quasi-truth”¹⁹ when the following closely related facts obtain:

- (2) I'm traveling to Argentina, and
- (3) WILL (An amusement park exists in Argentina and I arrive there)

¹⁵ Non-presentist A-theorists may wish to insist that the passage of time consists in the process by which objects successively possess different A-properties like *pastness*, *presentness*, and *futurity*. Presentists cannot endorse this account of passage because on their view it is impossible for anything to possess genuine *pastness* or *futurity*.

¹⁶ This is related to the debate over whether time could pass without change. I take it that presentists are firmly in the camp that says “yes.” For a representative defense of the possibility of temporal passage without change, see Sidney Shoemaker, “Time Without Change,” *Journal of Philosophy* 66, 12 (1969): 363–81.

¹⁷ For endorsements of this objection, see Dowe, “The Case,” 443; Miller, “Time Travel,” 226.

¹⁸ “The Nowhere Argument,” A Time Travel Website, accessed December 30, 2013, ed. John W. Carroll, <http://timetravelphilosophy.net/topics/nowhere/>.

¹⁹ Roughly, a *quasi-truth* is something appropriate to assent to in everyday circumstances, although not literally true. On the notion of quasi-truth, see Sider “Presentism;” and Markosian, “A Defense,” 24–5.

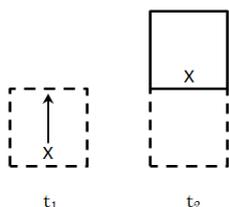
This response makes the case of spatial travel on offer inapplicable as a counterexample to (P2).²⁰

Given that presentists think time is very different from space, they will likely want to resist the likening of time travel to spatial travel. *Contra* spatial travel, time travel simply cannot be a genuinely relational affair for presentists. This is because presentists cannot (or at least should not) believe that it is possible for any genuine cross-temporal relation to hold, for the simple and powerful reason that *no* relation can hold without coexisting relata. As such, I think presentists should welcome the truth of (P2) with open arms. However, now aware of the explanation for this concession, we should be skeptical of the third premise:

- (P3) If time travel is possible, then it is possible to *travel* to the past or future.

In order for the argument to be valid, the sense of ‘travel’ at work here must be the same relational sense that backs (P2). Importantly, this exposes a crucial bit of the rationale for (P3) that was not initially apparent – namely, that *time travel* is genuinely relational. But now we can see that (P3) entails that there must exist a (concrete) nonpresent time in order to time travel, which is tantamount to the position that traveling in time requires that presentism be false! Although *prima facie* this premise appeared conceptually true (probably because ‘time travel’ contains the word ‘travel’), closer inspection has revealed it to be inconspicuously question-begging. As such, if it can be shown that presentists can make metaphysical sense of time travel being non-relational, this will give us a reason to reject (P3). I hope to do just this. My plan is to show that presentists have the

²⁰ It may be possible to repair the spatial-analogy case. For example, imagine a case where some person, x, knows that (say) God is going to create a new closed spatial region. God’s plan is to connect the new region to the finite open space that x inhabits. Given her knowledge, x begins to travel to the nonexistent space at t_1 , arriving when it appears at t_2 :



But is it strictly-speaking true that x is traveling to the nonexistent closed space at t_1 ? I think not. Again, we can cite “in the ballpark” facts that suffice to make it quasi-true, like: (i) x is traveling to the “edge” of the open space at t_1 , and (ii) WILL (there exists a closed space connected to the “edge” of the open space and x arrives there).

resources to account for the facts that make for time travel on the traditional Lewisian view without commitment to any nonpresent entities. I will turn to this task in the next section.

2.2. A Presentist-Friendly Endorsement

Keller, Nelson, Paul Daniels, and Ryan Wasserman all agree that presentists can translate time travel talk into appropriately tensed language.²¹ In this section, I follow them and show exactly how presentists can account for the facts that make for time travel on the traditional Lewisian view of what time travel consists in. The traditional view is best articulated by David Lewis himself:

What is time travel? Inevitably, it involves a discrepancy between time and time. Any traveler departs and then arrives at his destination; the time elapsed from departure to arrival (positive, or perhaps zero) is the duration of the journey. But if he is a time traveler, the separation in time between departure and arrival does not equal the duration of his journey.²²

Lewis goes on to make a useful distinction between *external time* and *personal time*. The former is simply time itself, which provides an objective ordering and metric of an object's stages.^{23, 24} An object's personal time, by contrast, provides a subjective ordering – the assignment of coordinates to its stages which maintains the regularities and physical processes common to its kind.²⁵ The motivation for this distinction is easy to see. Before entering her time machine, a pastward time traveler may appropriately utter 'In just a few seconds I will see dinosaurs,' but in this case the traveler is really going millions of years

²¹ Keller and Nelson, "Presentists Should;" Daniels, "Back to the Present;" Wasserman, *The Paradoxes*.

²² David Lewis, "The Paradoxes of Time Travel," *American Philosophical Quarterly* 13, 2 (1976): 145.

²³ For the purposes of this paper, I am assuming that time is one-dimensional and continuous. Moreover, I will not consider the possibility of branching timelines or "closed time-like curves." For a useful discussion on how closed time-like curves relate to presentist time travel, see Bradley Monton, "Presentists Can Believe in Closed Timelike Curves," *Analysis* 63, 3 (2003).

²⁴ I will often use vocabulary associated with perdurantism, the view that material objects persist by virtue of having different temporal parts – or "stages" – at each moment they exist. Endurantists deny the existence of temporal parts of material objects, and will therefore need to understand talk of stages neutrally where needed. One option is to utilize object-time ordered pairs. Another option is to let short-lived events of an object's life take the place of temporal parts. On this latter strategy, see Ned Markosian, "Two Arguments from Sider's *Four Dimensionalism*," *Philosophy and Phenomenological Research* 68, 3 (2004): 675-6.

²⁵ Lewis only explicitly gives this account for persons, but it easily generalizes. See Lewis, "Paradoxes," 146.

into the past, not a few seconds into the future. With the relevant distinction in hand, this utterance becomes less paradoxical: we can say that just a few seconds of the traveler's *personal time* will elapse between her entering the time machine and arriving millions of years in the *external* past. This kind of discrepancy between external time and personal time is what makes for time travel on the traditional Lewisian view:

LEWISIAN TIME TRAVEL (LTT)

Necessarily, something travels in time iff and because there is a discrepancy between its personal time and external time.²⁶

Although Lewis's distinction is a good one, his functional account of personal time is inadequate. Wasserman explains:

...consider the case of a single, non-time traveling electron. Suppose that some of its stages are labeled in order (1, 2, 3, etc.) according to external time. And suppose further that every electron remains intrinsically unchanged throughout its entire career. In that case, one can assign coordinates to the stages of our particular electron in many different ways and still preserve the kinds of regularities we ordinarily see in other electrons. For example, one can simply reverse the ordering of all the electron-stages. In that case, there would be discrepancy between the "personal" time of the electron and external time, but that would not make the electron a time traveler.²⁷

To solve this problem, Wasserman proposes a revised account according to which "an object's personal time is the assignment of coordinates to its stages that matches the coordinates given by the relevant causal relation"²⁸ – where 'relevant causal relation' picks out whatever immanent causal relation makes for identity over time. The background assumption for this account is the common belief that identity over time (for material objects) requires the right kind of causal dependence between an object's stages.²⁹ Importantly, this account appropriately privileges a unique ordering of the electron's stages and thereby avoids the worry above.

²⁶ LTT is endorsed (among others) by Lewis, "Paradoxes;" Dowe, "The Case;" Sider, *Four Dimensionalism*; Sider, "Traveling;" Keller and Nelson, "Presentists Should;" Monton, "Presentists Can;" Alasdair Richmond, "Recent Work on Time Travel," *Philosophical Books* 44, 4 (2003): 297-309; Frank Arntzenius, "Time Travel: Double Your Fun," *Philosophical Compass* 1, 6 (2006): 599-616; Steven Hales, "No Time Travel;" Wasserman, *The Paradoxes*.

²⁷ Wasserman, *The Paradoxes*, 39.

²⁸ Wasserman, *The Paradoxes*, 34.

²⁹ See David Lewis, "Survival and Identity," in *The Identities of Persons*, ed. Amélie Oksenberg Rorty (Berkeley: University of California Press, 1976). Reprinted in his *Philosophical Papers*, Vol. I (Oxford: Oxford University Press, 1983).

In Defense of the Compossibility of Presentism and Time Travel

By introducing a sentential personal tense operator, as utilized below, we can give a more careful account of personal time that employs Wasserman's revision. First, let's take a look at how eternalists would characterize the account (for simplicity, I've only provided truth conditions for the non-metric future-tensed personal tense operator, and only as it applies to presently existing objects):

ETERNALIST PERSONAL TIME (EPT)

WILL-BE-FOR-O (Φ) at $t \leftrightarrow$ (i) O exists and has features F_1-F_n at t , (ii) there exists some time t^* and some object x such that x has features G_1-G_n at t^* and Φ at t^* , and (iii) O existing and having features F_1-F_n at t immanently causes it to be the case (in the relevant way) that x exists with features G_1-G_n at t^* .

For the eternalist, the personal tense operator reduces to temporally-indexed qualitative facts and immanent causal relations involving timelessly existing stages. On this account, to say that *it will be the case for some object O that Φ* is (basically) to say that O has a stage causally downstream at some time where Φ . To see the account at work, consider:

FIGURE 1

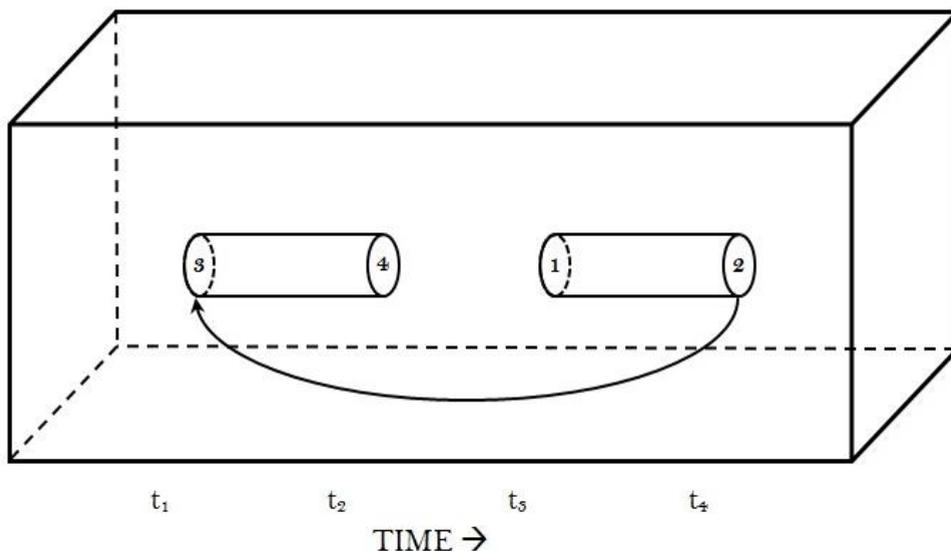


FIGURE 1 depicts a case of discontinuous time travel to the past. The x-axis (t_1-t_4) represents external time, whilst the numbered circles (①-④) represent the

ordering of the object's stages according to the relevant immanent causal relation. The object persists normally from t_3 to t_4 , where its departure-stage (i.e. ②) activates a time machine, causing it to be the case (represented by the curved arrow) that its arrival-stage (i.e. ③) appears at t_1 , where it again persists normally until t_2 . There is a discrepancy between the object's relevant causal ordering and its external ordering: ③ is in the *causal future* and the *external past* of ②. By EPT, the object's relevant causal ordering is equivalent to its personal time ordering, thereby allowing us to capture the illustrated LTT-discrepancy: ③ is both a *personal successor* and an *external predecessor* of ②.

Presentists cannot describe the discrepancy in this way. To see why, assume that presentism is true and t_4 is present. In this case, ③ simply doesn't exist, and so it can neither be temporally prior nor a personal successor of anything.³⁰ But we should not expect presentists to be able to conform to the eternalist's characterization of the discrepancy – they will want to do it in their own terms. The general approach I wish to take towards a presentist-friendly description involves making use of appropriately tensed claims, as first suggested by Keller and Nelson:

But the presentist can have just the same patterns of events happening at just the same times. Or at least, it can be the case on the presentist model that the right sorts of events *will* happen, or *did* happen, or *are* happening, at the right sorts of times.³¹

In agreement here, I take it that if presentism is even to make it to the starting line, it must allow for some way or other of understanding the facts that eternalists utilize to characterize time travel cases – namely, (i) facts about the ordering of an object's stages according to external time, and (ii) facts about how an object's stages relate causally. Fortunately, a presentist-friendly description of the external ordering an object's stages can be found with ease. With respect to FIGURE 1, for example, instead of saying that ③ is an external predecessor of ②, presentists can say the following (where t_4 is the present time):

³⁰ Endurantists will need to understand this claim in their own terms, for on their view the departure and arrival "stages" are really one and the same wholly present object. As I noted in fn.24, there are two promising ways for the endurantist to understand stage-talk. One way is for the endurantist to replace the perdurantist's stages with short-lived *events* of an object's life-event, rather than literal parts of the object. The endurantist could then take the numbered circles to denote the relevant instantaneous events. Alternatively, the endurantist could take the numbered circles to denote ordered pairs of the object and a particular concrete time. Thanks to Hud Hudson for pushing me on this.

³¹ Keller and Nelson, "Presentists Should," 338.

- (4) ② exists and ③ does not, and
 (5) WAS (③ exists and ② does not)

An important feature of the presentist's primitive tense operators is that they are *ontologically noncommittal*: the apparent existential commitments of quantifiers and referring terms within their scope are negated.³² As such, presentists can accept the truth of (5) without being committed to the existence of past arrival-stage ③.

The more difficult task is articulating a presentist-friendly account of personal time that will allow us to capture the relevant causal ordering of the object's stages. Although presentists cannot accept EPT because it quantifies over nonpresent entities, they can easily regiment the account with tense operators to begin to alleviate such commitment. But this won't be enough. In order to complete such an account of personal time, we need a presentist-friendly way of capturing the fact that an object has an appropriate causal successor in the external past or future.

Unfortunately, the metaphysics of causation has been especially troublesome for presentists. We can appreciate the standard worry given a few popular assumptions: (i) the causal relata are physical objects (e.g. events), (ii) causation is not always simultaneous, and (iii) if *c* causes *e*, then both *c* and *e* exist. Now here's the punch: if causation at least sometimes occurs at a temporal distance, and if the relevant physical relata need exist in order for said relation to hold, then presentism is straightforwardly false.³³ One response on behalf of the presentist is to drop the *physical* requirement – perhaps the causal relata are best taken to be abstract entities that exist in the present. Presentists are likely to posit a variety of tensed *facts*, for example, and may happily make use of them as the causal relata.³⁴ However, there are a few reasons to dislike fact-causation to which

³² More familiar operators share this feature as well. For example, modal primitivists who accept the view that everything is actual traditionally take the modal operator 'POSSIBLY' to work in this way; e.g. the truth of 'POSSIBLY (There are talking donkeys)' brings no commitment to talking donkeys.

³³ An argument along these lines is considered by John Bigelow, "Presentism and Properties," *Philosophical Perspectives* 10 (1996): 35-52; Dean Zimmerman, "Chisholm and the Essences of Events," in *The Philosophy of Roderick M. Chisholm*, ed. Lewis E. Hahn (Chicago: Open Court, 1997); Michael Tooley, *Time, Tense, and Causation* (Oxford: Clarendon Press, 1997); Sider, "Presentism;" Markosian, "A Defense;" Bourne, *A Future*; and Brannon McDaniel, "Presentism and Absence Causation: An Exercise in Mimicry," *Australian Journal of Philosophy* 88, 2 (2009): 323-32.

³⁴ On fact-causation, see Jonathan Bennett, *Events and Their Names* (Indianapolis: Hackett, 1988), 21-49.

I am largely sympathetic.³⁵ Nevertheless, for those that do not share such quibbles, everything that follows could be accomplished just as well in a fact-causation framework. Although I can't argue for it here, the option I prefer presentists take is to leave behind the idea that causation is a metaphysically distinguished relation.³⁶ As such, I think presentists ought to deny that 'c causes e' (where 'c' and 'e' purport to name existing relata) is the correct fundamental locution for causation. Following Sider, presentists will benefit from utilizing a two-place sentential causal operator, providing 'BECAUSE (Φ), WILL_{N-UNITS-OF-TIME-HENCE} (Ψ)' for ordinary (forward-directed) causation, and 'BECAUSE (Φ), WAS_{N-UNITS-OF-TIME-AGO} (Ψ)' for backward causation.³⁷ What is most important for my purposes is that this approach allows presentists to engage in causal-talk without ontological commitment to nonpresent entities. For example, take:

- (6) Jen's currently activating the time machine causes her appearance in Seattle 30 years ago.

By utilizing the causal operator, (6) can be translated into:

- (7) BECAUSE (Jen activates the time machine), WAS_{THIRTY-YEARS-AGO} (Jen appears in Seattle)

Although (6) apparently commits us to the existence of the event *Jen's appearing in Seattle*, (7) allows us to countenance the same causal connection without this commitment.

Certain tangential issues aside, I will adopt this general approach to causation.^{38,39} But before we can usefully employ the causal operator in a presentist-friendly account of personal time, we also need to be able to pick out the right kind of causal explanation – namely, the one that makes for identity over time. To explicitly represent the explanation required, I will simply subscript the causal operator with 'ID' which will do the same stipulatory work as 'in the

³⁵ For one, the fact-causation theorist sacrifices neutrality with respect to the granularity of facts. Moreover, she will have to justify taking the causal relata to be causally-inert entities.

³⁶ This is where my view differs substantially from that of Keller and Nelson, who agree that "if causation can be a cross-time relation on the four-dimensionalist view, then it can be one on the presentist view too." See Keller and Nelson, "Presentists Should," 341.

³⁷ See Sider, "Presentism," 338; and Sider, "Traveling," 5.

³⁸ For some worries involving this approach, see Sider, "Presentism," 339-40.

³⁹ It is worth noting that adopting the causal operator does not commit one to any substantive thesis about the metaphysical basis for causation. In other words, presentists certainly don't have to take the causal operator as primitive. One plausible reductive view that presentists could opt for, for example, says that the causal operator reduces to the laws of nature plus the instantiation of qualitative properties and single-time relations.

relevant way' in EPT. Presentists can then say 'BECAUSE_{ID} (O exists and has such-and-such features), WILL/WAS (there exists a y with such-and-such features)' to express that some object O has an *appropriate* causal successor in the external future/past. We can now produce a complete account of presentist personal time that substantively mirrors EPT (again, I've only provided truth conditions for the non-metric future-tensed personal tense operator, and only as it applies to presently existing objects):

PRESENTIST PERSONAL TIME (PPT)

WILL-BE-FOR-O (Φ) \leftrightarrow O exists and has features F_1 - F_n and either:

- (i) WILL (There exists some y such that y has features G_1 - G_n and Φ) and BECAUSE_{ID} (O exists and has features F_1 - F_n), WILL (There exists some y such that y has features G_1 - G_n), or
- (ii) WAS (There exists some y such that y has features G_1 - G_n and Φ) and BECAUSE_{ID} (O exists and has features F_1 - F_n), WAS (There exists some y such that y has features G_1 - G_n).⁴⁰

PPT reveals that by appropriately employing tense and (subscripted) causal operators, we can straightforwardly emulate EPT in a way that is friendly to a presentist's ontology.⁴¹ For a visual representation of the account at work, we can reconstruct (part of) FIGURE 1 into a presentist-friendly model as shown below:

⁴⁰ Cf. Wasserman, *The Paradoxes*.

⁴¹ It is worth noting that PPT can be used to (accurately) describe the personal futures of ordinary persisting objects. For example, imagine that I plan to order pizza tonight so that it is now true that *it will be for me that I order pizza*. This is true because *it will be the case that someone appropriately causally related to me orders pizza*. More carefully:

WILL-BE-FOR-O (O orders pizza) iff (i) O exists and has features F_1 - F_n , (ii) WILL (There exists some y such that y has features G_1 - G_n and O orders pizza) and (iii) BECAUSE_{ID} (O exists and has features F_1 - F_n), WILL (There exists some y such that y has features G_1 - G_n).

As such, PPT seems to successfully undermine a worry articulated by Sider, "Traveling," 333; *my emphasis*:

That I will view a dinosaur in my personal future amounts merely to the fact that I once viewed a dinosaur, and moreover that this is caused by my entry into a time machine. Since this fact *bears little resemblance to the facts that constitute a normal person's genuine future*, I could not enter the time machine with anticipation and excitement at the thought of seeing a dinosaur, for it is not true that I am about to see a dinosaur, nor is the truth much like being about to see a dinosaur.

FIGURE 2

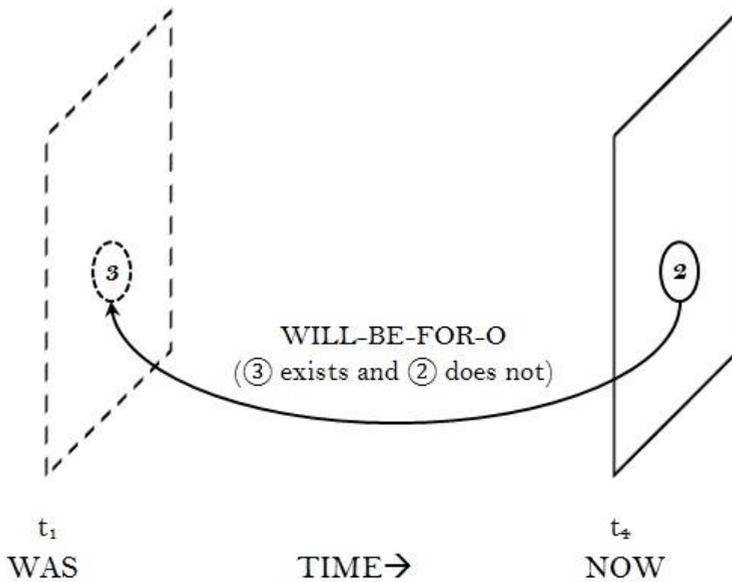


FIGURE 2 depicts “two” instantaneous cross-sections of the eternalist’s block in FIGURE 1.⁴² The present time is t_4 , and thus according to presentism, ② exists and ③ does not. However, presentists are happy to say that it was the case that ③ exists and ② does not, thereby capturing the relevant external ordering of the object’s stages. Similarly to FIGURE 1, the direction of immanent causation is represented by the curved arrow (although contra FIGURE 1, it is important to remember that it does not signify a genuine causal relation here). Given that ② existing now with various features immanently causally explains (in the relevant way) that it was the case that ③ exists with various features, PPT secures the relevant personal ordering of the object’s stages – that although ② exists and ③ does not according to external time, it will be for O that ③ exists and ② does not. Presentists are therefore equally capable of accounting for the illustrated

⁴² Some might object to the possibility of *discontinuous* presentist time travel (as depicted above). One way to do this is to endorse the view that temporal continuity is necessary for identity over time. However, as Keller and Nelson argue, this is a problem equally suited for eternalists and presentists alike. See Keller and Nelson, “Presentists Should,” 339. Another way is to endorse the view that discontinuous *causation* is impossible. But again, it’s not clear how this view could be motivated on purely presentist grounds, and even if it could, the diagrams could be redrawn so as to depict continuous pastward time travel instead.

LTT-discrepancy, easily described as a discrepancy between personal tensed facts and ordinary tensed facts: e.g. it both will be for O that and was the case that ③ exists and ② does not.

2.3. Against the Third Premise

We are now in a position to forge a strong objection against (P3) of the Nowhere Argument. As I suggested above, I think it should be of no great surprise that presentist-friendly time travel will not involve literally *traveling* to the past or future. As Kristie Miller has said,

in some sense the presentist can never travel to the past... what is the case is that it is now true that some current individual did exist in the past, and that individual's existence in the past is caused by her existence in the present.⁴³

Similarly, Wasserman suggests that presentists may say time travel

involves making certain past- or future-tensed statements true by acting on presently existing objects (programming flux capacitors, turning on time machines, etc.).⁴⁴

As I hope to have illuminated above, this kind of approach can be finessed so as to provide a way of countenancing the facts that make for time travel on the standard view without bringing in any commitment to nonpresent entities. This is significant because given the relational sense of 'travel' at work in the Nowhere Argument, (P3) entails that if time travel is possible, then it's possible that a (concrete) non-present time exists. So, this premise can be reasonably rejected on the grounds that (i) LTT is true, and (ii) presentists have the resources to account for the facts that make for time travel according to LTT without commitment to any nonpresent entities. In other words, (P3) is false because presentists can make sense of time travel being a *non-relational* affair. On my view this is accomplished by constructing a presentist-friendly account of personal time through the appropriate employment of tense and causal operators, thereby allowing presentists to characterize LTT-discrepancies as a mismatch between personal tensed facts and ordinary tensed facts. Of course none of this proves that presentist time travel is genuinely metaphysically possible – the point here is simply that the Nowhere Argument does not have the means to rule it out.

⁴³ Miller, "Time Travel," 226.

⁴⁴ Wasserman, *The Paradoxes*, 38.

3. The Suicide Machine Argument

Steven Hales endorses a different argument for the impossibility of presentism and time travel which he dubs the ‘Suicide Machine Argument.’⁴⁵ The basic idea is quite simple: if all of reality is confined to the present, then leaving the present to travel in time ultimately amounts to killing yourself. Hales also says that “the moves that presentists make to get around the Nowhere Argument are not successful to fend off the Suicide Machine Argument.”⁴⁶ In this section, I will argue that Hales’ argument fails for much the same reason the Nowhere Argument fails.

First, some thoughts about suicide. Hales says that “[f]or presentists, getting into a time machine is suicide – the occupant goes out of existence.”⁴⁷ The principle being relied on here seems to be this:

- (8) For any person, x , x commits suicide by Φ ing if Φ ing causes x to go out of existence.

The intuitive force is clear: being taken from the whole of reality is tantamount to annihilation. But before we get on board too quickly, consider the eternalist’s model in which all of an object’s stages exist timelessly within spacetime. On this picture, there is a definite sense (i.e. the wholly unrestricted, atemporal sense) in which it is impossible for an object to go out of existence – but surely, I would think, suicide would not be an impossible feat if eternalism were true. Granted, as long as Hales’ claim is charitably construed merely as a sufficient condition, the fact that it is impossible (on the eternalist’s model) to go out of existence would not entail the impossibility of eternalist suicide. But what alternative principle would the eternalist opt for – that is, what would the eternalist say suicide consists in? Plausibly:

- (9) For any person, x , x commits suicide by Φ ing iff Φ ing causes x to have no personal future.

This principle turns out to be good news for the compossibility of presentism and time travel, for the relevant condition is not only sufficient, but

⁴⁵ Hales, “No Time Travel.” For a response to the argument, see Jimmy Licon, “No Suicide for Presentists: A Response To Hales,” *Logos and Episteme* 2, 3 (2011): 455-64. For a rebuttal, see Steven Hales, “Reply to Licon on Time Travel,” *Logos and Episteme* 2, 4 (2011): 633-36. Also, see replies from Jimmy Licon, “Still No Suicide for Presentists: Why Hales’ Response Fails,” *Logos and Episteme* 3, 1 (2012): 145-51; and Jimmy Licon, “Dissecting the Suicide Machine Argument,” *Logos and Episteme* 4, 3 (2013): 339-52.

⁴⁶ Hales, “No Time Travel,” 353.

⁴⁷ Hales, “No Time Travel,” 357.

necessary. Analogously to the eternalist's account of personal time, PPT says that the direction of one's personal future is determined by the direction of the relevant immanent causal explanation. As such, as long as this immanent causal explanation can be directed (say) backwards in time, presentism allows time travelers to (i) go out of existence, and yet (ii) have a personal future in the external past.⁴⁸ Therefore, by rejecting (8) and instead following eternalists in accepting (9), presentists can sensibly say that time travel is *not* suicide.

Given the worries above, I think the best chance this argument has of succeeding is to formulate it without talk of suicide:

THE SUICIDE MACHINE ARGUMENT

- (P1) If presentism is true, then necessarily, if an object leaves the present, it goes out of existence.
- (P2) Necessarily, if something travels in time, it leaves the present.
- (C1) If presentism is true, then necessarily, if something travels in time, it goes out of existence.
- (P3) If time travel is possible, then it's not the case that necessarily, if something travels in time, it goes out of existence.
- (C2) If presentism is true, then time travel is impossible.

The first premise is uncontroversial: according to presentism *everything* is present, and so if an object leaves the present, it no longer exists. The rationale for (P2) is straightforward as well: there is simply no such thing as a time traveler who never leaves the present.

That leaves (P3). The rationale here is unclear. At one point, Hales says that “[eternalists] insist that any sort of successful travel, spatial or temporal, involves the traveler existing at departure and safely arriving, intact and still in reality, at the arrival.”⁴⁹ So perhaps the rationale for (P3) is supposed to be this: in order to successfully travel in time, the traveler must exist upon departure *and* arrival. But notice that this poses no threat to the compossibility of presentism and time travel,

⁴⁸ Some presentists deny the possibility of backwards causation (e.g. see Bourne, *A Future*, 134), and on such grounds could argue that backwards time travel is impossible. But in order for such an argument to show that there is something about presentism *in and of itself* that rules out the possibility of time travel, the motivation for ruling out backwards causation would need to be presentist-inspired as well. One such motivation is noted by Sider, “Traveling,” fn.5 who suggests that presentists could rule out backwards causation via their acceptance of anti-reductionism about the direction of time, plus the view that causation reduces (in part) to the direction of time.

⁴⁹ Hales, “No Time Travel,” 358.

for presentists may assert that *it was the case that* or *will be the case that* a traveler's arrival-stage exists at its respective arrival-time. With respect to FIGURE 2 for example, the depicted traveler's arrival-stage ③ existed at its arrival-time t_1 . A more plausible take on Hales' rationale for (P3) requires us to focus on the 'still' in the quote above. The idea here, I presume, is not only that time travelers must exist upon departure and arrival, but that they must exist upon arrival *after* their departure. But 'after' here could mean *personally after* or *externally after*. Let's look at each in turn:

- (R1) Successful time travel requires existing upon arrival personally after departure.
- (R2) Successful time travel requires existing upon arrival externally after departure.

If (R1) is the rationale at work, there is again no threat here. A presentist time traveler's departure-stage only needs to have the relevant immanent causal impact on their arrival-stage in order for PPT to secure the fact that the traveler exists upon arrival personally after their departure. With respect to FIGURE 2 for example, O's departure-stage ② immanently causes it to be the case (in the relevant way) that *it was the case that* O's arrival-stage ③ exists, making it true that O exists upon arrival *personally after* departure (i.e. making it true at departure that *it will be for O that* O exists). And relatedly, this personal tensed fact is true despite the fact that O goes out of existence upon departure. As such, (R1) would not be an effective rationale behind (P3) because the truth of (R1) is compatible with the requirement that time travelers must go out of existence upon departure. To reiterate the point made above, this is because the direction of one's personal future is determined by the direction of immanent causation. As long as a presentist time traveler is able to make the appropriate tensed statements about them true, existing upon arrival *personally after* an existence-ending departure is no problem. And in fact, barring the possibility of branching personal futures, going out of existence upon departure is an unsurprising consequence of securing a personal future beyond the present (if presentism is true). Given that (R1) is both easily embraced by presentists and naturally compatible with the denial of (P3), it fails as a candidate rationale.

What if (R2) is the rationale at work? Before we can evaluate this option, a note of clarification is in order. (R2) should *not* be interpreted as claiming that successful time travel requires the traveler to exist *at some post-departure time*, for this would rule out eternalist pastward time travel just as much as presentist pastward time travel. Rather, (R2) should be interpreted as claiming that successful time travel requires it to be *true at* some post-departure time that the

traveler exists *in the wholly unrestricted, atemporal sense of 'exists.'* On this reading, (R2) does in fact support (P3), for if time travelers must exist externally after their departure, it can't (also) be the case that time travelers must completely go out of existence upon departure. More, the rationale constitutes a threat to the compossibility of presentism and time travel; presentists cannot allow (say) a pastward time traveler to exist upon arrival externally after their departure, for this would commit them to the existence of the respective *past* arrival-time. Given these features, I take it that (R2) must be the intended rationale behind (P3). But just like the rationale behind the third premise of the Nowhere Argument, (R2) amounts to the question-begging position that time travel requires the existence of a (concrete) nonpresent time!⁵⁰ To see this, take a look at FIGURE 2. If it must be true externally after t_4 that O exists upon arrival, then it must also be true externally after t_4 that O's *past* arrival-time, t_1 , exists. (P3) of the Suicide Machine Argument can therefore be rejected on familiar grounds: (i) LTT is true, and (ii) presentists have the resources to account for the facts that make for time travel according to LTT without commitment to any nonpresent entities. As it turns out, the Suicide Machine Argument fails for much the same reason the Nowhere Argument fails.

4. Conclusion

A time traveler in a presentist world cannot *travel* to the past or future, for there are no such places to travel to. More, such a time traveler naturally pays the price of nonexistence in order to secure a personal future at odds with external time. But as long as the requisite tensed statements are made true and such a deviant personal future *is* achieved, the obtaining of the associated LTT-discrepancy will make the traveler just as much a genuine time traveler as one who inhabits the eternalist's block. And as I have argued, neither the Nowhere Argument nor the Suicide Machine Argument have anything to say here.⁵¹

⁵⁰ Jimmy Licon similarly accuses the Suicide Machine argument of begging the question. See Licon, "No Suicide."

⁵¹ Special thanks to Ryan Wasserman and Hud Hudson for providing helpful comments on an earlier draft of this paper.