

# NO TIME TRAVEL FOR PRESENTISTS

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ABSTRACT: In the present paper, I offer a new argument to show that presentism about time is incompatible with time travel. Time travel requires leaving the present, which, under presentism, contains all of reality. Therefore to leave the present moment is to leave reality entirely; i.e. to go out of existence. Presentist “time travel” is therefore best seen as a form of suicide, not as a mode of transportation. Eternalists about time do not face the same difficulty, and time travel is compossible with eternalism.

KEYWORDS: presentism, time travel, time, metaphysics

Presentism is incompatible with time travel. Thus far, the literature on their compatibility has focused on one argument, the so-called Nowhere Argument. According to The Nowhere Argument, if the present is all that is real, then there is nowhere for a would-be time traveler to go, and so time travel is not possible for presentists. This argument has been roundly dismissed by recent commentators. The present paper presents a new reason to reject the compatibility of presentism and time travel, namely, the Suicide Machine Argument. It will be shown that the moves that presentists make to get around the Nowhere Argument are not successful to fend off the Suicide Machine Argument.

## Presentism

Here are some recent statements of presentism:

- Only the present exists.<sup>1</sup>
- Only currently existing entities exist, and... the only properties and relations those entities instantiate are those they currently instantiate.<sup>2</sup>

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<sup>1</sup> Craig Bourne, *A Future for Presentism* (Oxford: Oxford University Press, 2006), 13. Bourne’s complete theory of presentism is complicated: he defends an “ersatz presentism” according to which times are abstract objects; they are ordered pairs of present-tensed propositions that do not contain *past* or *future* operators, and a date, ordered by a relation isomorphic to “earlier than”. Abstract objects aren’t in time, therefore can’t be ordered by the true “earlier than” relation. The present is the only concrete instantiation of a time. Bourne’s theory is a shadow eternalism behind a concrete presentism.

- It is always the case that for every  $x$ ,  $x$  is present.<sup>3</sup>
- Presentism... is the doctrine that all reality is confined to the present – that past and future things simply do not exist, and that all quantified statements that seem to carry commitment to past or future things are either false or susceptible of paraphrase into statements that avoid the implication.<sup>4</sup>

Bourne, Sider, and Zimmerman employ tenseless quantification, and most presentations of presentism tend to do so. The reason is is easy to see: “everything exists [present tensed] exists now” is trivial, since it means no more than whatever exists now, exists now. Crisp tries to work out a nontrivial definition of presentism that involves tensed existence, but that complication is not important for the present discussion. Presentists agree that there may be things that do not exist in time, like abstract objects or God, but the root presentist idea is that everything that exists in time is *simultaneous*. You can’t have (tenselessly) existing things at different places in time. Everything that exists, exists at once.

Presentists are committed to a purely objective present; there is a non-relative fact about the stuff of the world at one time that they are present/happening/real, and other events and objects merely were or will be. Eternalists, on the other hand, are committed to a merely subjective present; the fact that such-and-such date (399 BCE, 2010, 3011, whatever) is present can only be true relative to something or some event, and is not true in an objective or nonrelative way. That is, ‘present’ like ‘here,’ ‘this,’ or for modal realists ‘actual,’ is indexical. There isn’t a unique present.

### **Truthmakers and the Nowhere Argument**

The reason that some have doubted the compatibility of presentism and time travel is that if the present is all that is real, then Apatosaurus is just as nonexistent as King Kong. One cannot journey to the nonexistent, and so if presentism is true, then one cannot travel to nonexistent points in time, namely, any time other than the present. The prospects of traveling in time to warn Socrates off the hemlock are no more viable than traveling to Hogwarts to warn Harry Potter about Lord

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<sup>2</sup> Theodore Sider, “Traveling in A- and B- Time,” *The Monist* 88, 3 (2005): 329.

<sup>3</sup> Thomas M. Crisp, “Presentism,” in *The Oxford Handbook of Metaphysics*, eds. Michael J. Loux and Dean W. Zimmerman (Oxford: Oxford University Press, 2003), 215, cf. Thomas M. Crisp, “On Presentism and Triviality,” in *Oxford Studies in Metaphysics, Volume 1*, ed. Dean W. Zimmerman (Oxford: Oxford University Press, 2004), 16.

<sup>4</sup> Dean W. Zimmerman, “The A-Theory of Time, the B-Theory of Time, and ‘Taking Tense Seriously,’” *Dialectica* 59, 4 (2005): 402.

Voldemort. Simon Keller and Michael Nelson call this the Nowhere Argument; for a presentist, time travel is a nonstarter because there is nowhere to go.<sup>5</sup>

The Nowhere Argument is essentially a time-travel variant of the broader truthmaker argument against presentism. According to the truthmaker argument, if the present alone is real, then no statement about the past or future can have a truth value. This is because there is nothing about reality that would make such a statement either true or false. True propositions must have truthmakers, and there is no past or future reality to make a statement about the past or future true, *mutatis mutandis* for false statements. Yet of course it is perfectly true to say that “Pete Sampras won the Wimbledon’s men’s final in 1999 against Andre Agassi” and “Roger Federer will win several tournaments over the next few years.” Since presentism cannot allow such sentences to have any truth value at all, presentism is false.

The truthmaker argument has been recently defended by Michael Dummett in his Dewey Lectures.<sup>6</sup> The canonical reply of presentists is to respond that the truthmakers for past and future facts are located in the present, and are expressed by appropriately tensed language.<sup>7</sup> As John Bigelow states it, the truthmaker principle may insist that truth supervenes on being, but the presentist can aver that there are present intrinsic properties of the world upon which all past and future tensed facts supervene. Moreover, sentences that quantify over times can be translated without remainder into tensed sentences with present truthmakers. There’s some finessing that presentists need to do about singular statements involving objects that no longer exist, such as “Socrates was snub-nosed,” since there is nothing in the presentist’s universe that ‘Socrates’ refers to. And it is hard to see how sentences with non-referring subject terms can be true. In this case, presentists tend to take a page out of the Quinean handbook (see the section on ‘Pegasizing’) and start talking about individual essences, or haecceities.<sup>8</sup>

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<sup>5</sup> Simon Keller and Michael Nelson, “Presentists Should Believe in Time-Travel,” *Australasian Journal of Philosophy* 79, 3 (2001): 333-45.

<sup>6</sup> Michael Dummett, *Truth and the Past* (New York: Columbia University Press, 2004), 74.

<sup>7</sup> This response can be found in John Bigelow, “Presentism and Properties,” in *Philosophical Perspectives 10: Metaphysics*, ed. James E. Tomberlin (Oxford: Blackwell Publishing, 1996), 35-52; Michael C. Rea, “Four-Dimensionalism,” in *The Oxford Handbook of Metaphysics*, eds. Michael J. Loux and Dean W. Zimmerman (Oxford: Oxford University Press, 2003), sec 4; Bourne, *A Future*, 56-60.

<sup>8</sup> See Ned Markosian, “A Defense of Presentism,” in *The Oxford Handbook of Metaphysics*, eds. Michael J. Loux and Dean W. Zimmerman (Oxford: Oxford University Press, 2003), 47-82; Rea, “Four-Dimensionalism;” Gary Rosenkrantz, “An Epistemic Argument for Enduring

Keller, Nelson, and Ted Sider all reject the Nowhere Argument on similar grounds. In the case of time travel, a presentist will translate sentences with ostensible commitments to times into sentences with tensed expressions. Here's Sider:

Instead of claiming that *there exists* a dinosaur-viewing by me, located two hundred million years before the present time, the presentist can say "it was the case two hundred million years ago that I am viewing a dinosaur." Instead of ascribing a two-place causal relation to the events *my entry into the time machine* and *my viewing a dinosaur*, she can use a two-place tense operator 'because  $\Phi$ , it was the case  $n$  units of time ago that  $\Psi$ ' in the following tensed claim: "because I entered a time machine, it was the case two hundred million years ago that I am viewing a dinosaur."<sup>9</sup>

According to the presentist, while other times besides the present moment aren't real, there are past, present, and future-tensed facts, and tense is not reducible to times. Let's assume that the appeal to tensed facts is a perfectly adequate response to the truthmaker objection to presentism. Let's even assume that, if the Nowhere Argument is just a time-travel variant of the truthmaker objection that the solution of tensed facts does the job in defeating it. The problem is that there is still a remaining conundrum for the would-be presentist time traveler, one that cannot be resolved though the clever manipulation of tensed sentences.

### The Suicide Machine

Let us consider what happens when Dr. Who steps into a blue police-box shaped time machine, twiddles some knobs, and disappears. Presentists and eternalists agree about the following facts.

First, the time machine is the cause of an effect at a discontinuous point in external time. That is, when viewed from the point of view of time external to the time traveler, causation is discontinuous. Dr. Who's flipping a coin now, right before he pushes the buttons in the time machine, causes it to come up heads 1000 years in the future without the coin's remaining airborne and spinning for a millennium. In the time traveler's personal time, with its forward-ordered

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Human Persons," *Philosophy and Phenomenological Research* 57, 1 (2005): 209-24. And, of course, Willard V. O. Quine, "On What There Is," in his *From a Logical Point of View* (Cambridge: Harvard University Press, 1953), 1-19.

<sup>9</sup> Sider, "Traveling," 232.

psychological states, the coin flips for only a couple of seconds before coming up heads. Time travel produces disjoint causation, a sort of action-at-a-(temporal)-distance. If the time travel is into the past, then it is a form of backwards causation.<sup>10</sup>

Second, time machines produce temporally disconnected objects. If Dr. Who punches the buttons for 399 BCE, then Dr. Who is no longer in 2010, but he was in 399 BCE, with all the physical and mental characteristics he will have in 2010. Objects are temporally scattered: either they have temporal parts that are separated by swaths of time (for perdurantists) or they wholly exist at different moments in time without passing through the moments between (for endurantists).

Now we come to disagreement. For presentists, getting into a time machine is suicide – the occupant goes out of existence. Recall that presentists are committed to a purely objective present; the events and objects at this objective present alone are real, even if other things have been or will be real. After entering the time machine, Dr. Who no longer exists in the objective present, and therefore he is no longer in reality. Which is just to say that Dr. Who ought to view the time machine with considerable trepidation – after all, it means his annihilation. If Dr. Who ‘travels’ five years into the future, then he goes out of existence now, is nonexistent for five years, but will come back into existence five years from now. In this case, “time traveling into the future” is best described as death and resurrection. It is a theologically neutral, but metaphysically loaded, resurrection of the body. Permanent “time traveling into the past,” on the other hand, has a less rosy outcome. It is merely death.

Consider H. G. Wells’s time traveler. Wells writes, “he may even now – if I may use the phrase – be wandering on some plesiosaurus-haunted Oolitic coral reef, or beside the lonely saline lakes of the Triassic Age.” For a presentist, that is *not* an apt description of the situation. The time machine may have caused it to be the case that the traveler *was* wandering on some plesiosaurus-haunted Oolitic coral reef, or beside the lonely saline lakes of the Triassic Age, but of course he isn’t doing so now. Furthermore, no part of reality contains the time traveler doing any such wandering. Whatever backward causation the time machine may have effected, the traveler is no longer in the objective present and therefore no longer exists. There is nothing farther requisite to make him a perfect non-entity.

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<sup>10</sup> Although not all presentists think that backwards causation, and hence backwards time travel, is possible. See Bourne, *A Future*, 134.

Not only does presentist “time travel” merely require the would-be traveler to go out of existence *in nihilum*, but it also requires that objects come into existence *ex nihilo*. When Dr. Who steps into the time machine in 2010 and pushes the buttons for 399 BCE, the time machine causes it to be the case that in 399 BCE, Dr. Who came into existence. But he literally came into existence out of nothing. When 399 BCE was the present, it was true that “in 2010 Dr. Who will enter a time machine, and this machine will cause him to come into existence now” (assuming a closed future with respect to Dr. Who’s adventures). However, at one second in 399 BCE, reality does not contain Dr. Who in any fashion and the next second it does contain him, whole, fully grown, with memories of his future life. The best description is that he came into being out of nothingness.

Eternalists balk at the notion that time machines are really suicide machines. They 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. Presentist time machines won’t take you to the past, they only provide travel to the Great Beyond. An eternalist time machine is far less threatening. Eternalists deny that there is an objective present; the now, they say, is purely subjective. Socrates is every bit as real and existing as the reader of this article, and he is in the present – his own present, one that also becomes the present of Dr. Who when he sets the controls to 399 BCE.

For eternalists, Wells’s description makes perfect sense. The time traveler is (tenselessly) wandering on some plesiosaurus-haunted Oolitic coral reef, not in our subjective now, of course, but in his own subjective present. When Wells’s time traveler, or Dr. Who, bops around time, they do not go out of existence; there is no death and resurrection, no changing the past while putting oneself in the grave (albeit an empty-casket burial). The time traveler remains in reality, fully existing at every stop along the way. So there is no coming into existence *ex nihilo* either – when Dr. Who travels to 399 BCE, he is never nonexistent, and therefore does not come into being out of nothing upon arrival. He may come out of the future, but he does not come out of the void.

Presentists argue that for Dr. Who a certain collection of properly tensed facts are true of him (and whatever else is in his personal time) that are not in keeping with a set of tensed facts ordered along external time, and that this counts as being a time traveler. To be sure, Dr. Who is a strange sort of temporally disjoint object when viewed from external time (and everything else is oddly disjoint when viewed from his personal time), but being this kind of object is insufficient to count as traveling in time. Either presentists must identify the objective present with the present of external time or the present of Dr. Who’s

personal time. Suppose they identify the present of external time as the objective present (an assumption made for presentation purposes above). In this case, by the Suicide Machine argument, Dr. Who leaves the objective present and thus goes out of existence. Suppose instead presentists identify Dr. Who's personal time as the objective present. In this scenario, after he gets into the time machine everything else in the world is separated from the objective present, and hence the universe minus Dr. Who goes out of existence.<sup>11</sup> If they count both as the present, that is either to admit that the present is subjective – i.e. eternalism is true – or it is to endorse the notion of multiple objective temporal dimensions. Obviously the first horn is capitulation to eternalism. Let us consider the second horn.

Suppose that there is more than one temporal dimension, so that 399 BCE is the present, and also 2010 is the present, but on a different temporal metric. A time traveler might move from one timeline to a point on an orthogonal timeline in a way that it counted as traveling in time. Both points would (presumably) be the present at which all of reality resides, although they would not be identical with each other. There was a brief flurry of discussion of two-dimensional time in the 1970's<sup>12</sup> and since then the little that has been written has been rather tepid about multidimensional time.<sup>13</sup>

It is difficult to know what to say about this possibility, mostly because there isn't an explicitly presentist defense of it to examine. There is the following dilemma for multidimensional presentists to overcome: either (1) any such defense would have to explain how every existing thing is at point  $t_a$  on one timeline, and yet every existing thing is also at point  $t_1$  on a different timeline without contradiction, and why the proper description is not that reality is wholly at the ordered pair point  $(t_a, t_1)$ , or (2) if reality is at an ordered pair point, then there is

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<sup>11</sup> An option which may lead to the solipsism of Robert A. Heinlein's time travel story "All You Zombies."

<sup>12</sup> For: Jack W. Meiland, "A Two-Dimensional Passage Model of Time for Time Travel," *Philosophical Studies* 26 (1974): 153-73; T.E. Wilkerson, "Time and Time Again," *Philosophy* 48, 184 (1973): 173-77; T.E. Wilkerson, "More Time and Time Again," *Philosophy* 54, 207 (1979): 110-12. Against: Ronald E. Nusenoff, "Two-Dimensional Time," *Philosophical Studies* 29 (1976): 337-41; Ronald E. Nusenoff, "Spatialized Time Again," *Philosophy* 52, 199 (1977), 100-01. Skeptical but officially neutral: David Lewis, "The Paradoxes of Time Travel," *American Philosophical Quarterly* 13 (1976): 145-52.

<sup>13</sup> Graham Oppy straightforwardly opposes it, and Murray MacBeath is skeptical but neutral. See Graham Oppy, "Can We Describe Possible Circumstances in Which We Would Have Most Reason to Believe that Time is Two-Dimensional?," *Ratio* 17, 1 (2004): 68-83 and Murray MacBeath, "Time's Square," in *The Philosophy of Time*, eds. Robin LePoidevin and Murray MacBeath (Oxford: Oxford University Press, 1993), 183-202.

the Lewis/Sider objection that no kind of travel in a two-dimensional time plane constitutes travel into one's own past. If  $time_1$  and  $time_2$  are imagined as axes on a Cartesian coordinate plane, and temporal movement is seen as advancing along these axes away from the origin, then backwards time travel along one of the axes will still be forward time travel along the other. In which case there is no backwards time travel to the same point in the plane.<sup>14</sup>

Another potential complaint from the presentist is that we all travel in time – we are all traveling into the future at the well-publicized rate of one second per second. If the Suicide Machine argument is right, then our own ordinary time travel into the future is just as impossible as anything out of H.G. Wells. Since it obviously possible, simple *modus tollens* shows that something has gone wrong with the Suicide Machine argument.

Here the right response is to turn the *tollens* into a *ponens*. Presentists should not take seriously talk of ordinary persistence being a sort of traveling in time. Ordinarily, time travel is understood as the removal of the traveler from the usual flow of time and jumped earlier or later in the stream – thus the Lewisian distinction between personal and external time. To count persistence along the moment-to-moment flow of time itself as time travel is to erase personal vs. external time and so to give a quite idiosyncratic interpretation of traveling through time. Moreover, there's a considerable literature on how it is possible for presentists to permit any sort of persistence (with David Lewis famously denying that they can), which is a component of an even broader literature on how it is possible for presentists to offer an adequate theory of change and solve the problem of temporary intrinsics. While it is beyond the scope of this paper to examine these issues, however presentists ultimately construe change, additional argument will be needed to show that the moving present is in some important sense a sort of time travel. Presentists need caution here, since, as argued above, for them time travel is impossible!

In the end it seems that, barring a successful presentist theory of multidimensional time, there is no such thing as time travel under presentism. Whatever the merits of the appeal to tensed facts as a general strategy against the truthmaker/ Nowhere Argument, it won't help the time travel case. Reason: for presentists, "time travel" is really suicide. Whatever odd causal links a time machine might produce, there is no such thing as traveling to other times. Unless, of course, you're an eternalist.<sup>15</sup>

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<sup>14</sup> See Sider, "Traveling," 334.

<sup>15</sup> Thanks to Dean Zimmerman for a very helpful discussion about an ancestor of this paper.