

***STILL* NO SUICIDE FOR PRESENTISTS: WHY HALES' RESPONSE FAILS¹**

Jimmy Alfonso LICON

ABSTRACT: In this paper, I defend my original objection to Hales' suicide machine argument against Hales' response. I argue Hales' criticisms are either misplaced or underestimate the strength of my objection; if the constraints of the original objection are respected, my original objection blocks Hales' reply. To be thorough, I restate an improved version of the objection to the suicide machine argument. I conclude that Hales fails to motivate a reasonable worry as to the supposed suicidal nature of presentist time travel.

KEYWORDS: presentism, Steven Hales, suicide machine argument, time travel

Presentists hold everything that exists must occupy the present moment. The present moment exists to the exclusion of all other moments; this is because whatever would be located in the past/future does not exist. On the other hand, eternalists hold that time is similar to space in that all moments exist; one particular moment does not exist to the exclusion of any other moment. The present moment only appears special from the epistemic perspective of a specific occupant, just like locations seem to be privileged from some particular perspective.

Hales' suicide machine argument² holds that one cannot time travel in a presentist universe. If the only moment that exists is the present moment, and time travel amounts to leaving the present moment, one could not time travel; to do so would be tantamount to suicide as the time traveler would have to leave the present moment (all of reality).

In my previous response to Hales, I argued the suicide machine argument fails.³ Although the presentist holds the present moment exists to exclusion of all other moments, presentism itself does not block the possibility of changing the structure of the present moment. If there is a machine which could re-arrange all of the matter and energy such that it was identical with a time other than the present, then time travel would be possible in a presentist universe.

¹ I would like to thank Professor Hales for his professional and thoughtful response to my work.

² Steven D. Hales, "No Time Travel for Presentists," *Logos & Episteme* I, 2 (2010): 353-360.

³ Jimmy Alfonso Licon, "No Suicide for Presentists: A Response to Hales," *Logos & Episteme* II, 3 (2011): 455-464.

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Hales holds his argument survives my objection.⁴ His response rests on two key claims:

- a) The supposed time machine featured in my response is not up to the task of time travel as it merely rearranges all of the matter/energy in the universe, instead of transporting the time traveler to a different moment.
- b) The assumption of Humean supervenience [i.e., two moments of time are identical just in case they have the same arrangement of energy and matter] prevents someone from going back in time unless they were part of what constituted a past/future moment; but such a moment would not include a time machine/traveler.

I respond to both claims. In the last section, I argue that even if my objection to the suicide machine fails, Hales has not made his case that presentist time travel is suicidal.

A Better Time Machine

In my original article, I argued that machine F is a time machine only if (a) F is capable of rearranging all of the matter/energy in the universe such that it is indistinguishable from a moment in the past/future, and (b) the identity of indiscernibles holds between the instantiated and the past/future moment.⁵ However, Hales thinks this conception of a time machine is inadequate.

For example, Hales writes:

Suppose we set the controls of Licon's time machine for one month into the future. According to Licon, this means that the entire universe undergoes a somewhat radical reconfiguration of matter/energy. *Yet why should we consider this new state of the universe 'one month in the future'?* There was no alternative future history of the universe, no other calendar on which we can show the days that were skipped *or sped through by the time machine*. The sole history of the universe involves an unusual redistribution of matter/energy at a certain point, but that doesn't mean that anything traveled in time, or jumped one month into the future. The universe was in state A at one moment and in state B the next moment.⁶

In this passage, there appear to be two objections to my conception of a time machine.

First, Hales holds that *merely* rearranging all of the matter/energy of the universe such that it resembles a past/future moment does not constitute traveling

⁴ Steven D. Hales, "Reply to Licon on Time Travel," *Logos and Episteme* II, 4 (2011): 633-636.

⁵ Licon, "No Suicide," 462.

⁶ Hales, "Reply to Licon," 634-4 (emphasis mine).

through time. It is not enough just to reproduce a moment that resembles a past/future moment; there must be something else that makes such a process a kind of time travel. If a machine is capable of rearranging all of the matter/energy from the universe, there must be a difference-maker between scenarios where (a) machines merely create a moment that resembles a past/future moment without that operation constituting time travel and (b) machines that re-arranging all of the matter/energy in the universe, along with some other factor, such that it constitutes time travel (e.g. re-creating all of the moments that connect the departure and arrival moments).

Second, Hales argues the conception of a time machine featured in my objection ignores the distinction between personal and external time. If a presentist time machine is designed solely to rearrange all of the matter/energy in the universe to the destination time for the traveler, then there can be no distinction between time from the perspective of the time traveler (personal) and time from the perspective of everyone else (external). Traveling from the early twenty-first century to the Middle Ages from the perspective of the time traveler and a calendar external to the time machine, time would instantaneously change from the twenty-first century to the Middle Ages. However there should be a distinction between the personal time of the time traveler and external calendar time. Although traveling from the present to the past would be instantaneous from the perspective of the time travel, it would be a longer time in time on the calendar; e.g. the time separating the present moment from the Middle Ages is far more than a few seconds.

Unfortunately, the time machine in Hales response only mildly resembles the time machine featured in my objection as it neglects a key component of my time machine proposal: Leibniz's law of the identity of indiscernibility⁷ must hold between the instantiated moment and a past/future moment. Hales is quite right that a machine which merely rearranging all of the matter/energy in the universe to resemble a moment from the past/future does not qualify as a time machine. If a machine rearranges the universe such that the instantiated and past/future moments respect the identity of indiscernibles, and the instantiated moment exists to the exclusion of all other moment, then it is a plausible candidate for a presentist time machine.

The same response applies to Hales' claim that my conception of a time machine blurs the difference between personal/external times. Although the version of a time machine offered in my response to Hales' just rearranges all of the matter/energy of one moment such that it is arranged other-moment-wise, it

⁷*Leibniz's law of the identity of indiscernibility*: If, for every property F, object x has F if and only if object y has F, then x is identical to y.

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nevertheless distinguishes between personal/external times. Although the time traveler moves from the departure to arrival moment instantaneously, the arrival/departure times are separated by the moments in between in terms of their temporal ordering; it is a fact of the matter that years 1890 (arrival) and 2012 (departure) are separated by a significant amount of time, even if the time between the arrival/departure moments is never actually instantiated.

If Hales finds this clarification dissatisfying, there is a simple solution: add a constraint to the conception of the presentist-friendly time machine. For example, in addition to rearranging all of the matter/energy in the universe such that it (a) resembles a moment from the past or future, and (b) such that the identity of indiscernibles holds between the instantiated moment and a moment from the past/future, a presentist-friendly time machine must take such steps (a) and (b) to recreate every moment that connects departure/arrival moments.⁸

Humean, Schmumean

Next, Hales argues that if my response to his argument rests on the Humean supervenience conception of time, then my response fails. The Humean supervenience conception of temporal identity holds that moments are identical just in case their arrangement of matter/energy is identical. Hales argues the Humean assumption creates a problem for the possibility of time travel: if a past/future moment did not already contain the time traveler, then they could not travel to that particular moment. This is because a machine would create a past/future moment missing the relevant time machine/traveler.

Hales writes:

If all of the matter/energy in the present moment is instantly rearranged to the exact configuration of matter/energy in 1862, then no one traveled back in time. '1862' is a rigid designator denoting a particular arrangement of matter and energy, and Licon's Humean supervenience constraint entails *that 1862 is recreated down to the smallest detail*. A recreation of 1862 does not allow for some matter to be differently assembled so that it forms a 'time traveler' from the future on the grounds that such an arrangement would not be 1862.⁹

Hales holds that Humean supervenience commits one to the following:

⁸ Hales states the following: "... Yet why should we consider this new state of the universe 'one month in the future'? There was no alternative future history of the universe, no other calendar on which we can show the days that were skipped or *sped through* by the time machine" (Hales, "Reply to Licon," 634-5, emphasis mine).

⁹ Hales, "Reply to Licon," 636 (emphasis mine).

- A. If an instantiated moment is identical to a past/future moment, then the matter/energy of the instantiated moment must be arranged exactly like the matter/energy of the past/future moment.

But it does not follow from (A) alone that a past or future moment would not contain a time traveler. For that, Hales needs an additional proposition:

- B. The past/future moment does not contain a time traveler.

The presentist lacks the motivation to accept (B). If the past/future moment was already constituted, in part, by the time traveler, i.e. it was a fact that someone successfully traveled to a past/future moment,¹⁰ then an instantiated moment is identical to a past/future moment *only if* it was partly constituted by the time traveler. If someone traveled to a moment in the past, and a time machine instantiated a moment from the past/future, then that moment *should* contain the time traveler; otherwise, the moment differs from the past/future moment; the presentist should accept (B) only if she was convinced that time travel is not possible.

Furthermore, Hales thinks that if my response assumes a Humean supervenience view of time, then one moment is identical to another just in case the arrangement of matter/energy is identically arranged. Thus, a machine could temporally transport a time traveler to another time only if the arrival moment was already constituted, in part, by the time traveler. Hence, if Humean supervenience holds, one of following possibilities must be the case:

- i. A time machine cannot rearrange matter/energy such that it meets the indiscernibility of identity for some past/future moment as this would not be time travel.¹¹
- ii. The time machine and its contents (e.g. the time traveler) do not constitute any part the past/future moment.¹²
- iii. If someone travels to a past/future moment, then it is a matter of fact that they are part of what constitutes that past/future moment.

¹⁰ Someone might wonder if there could be a truthmaker for such a proposition. I assume for the sake of this paper that there is a solution to the truthmaker problem for presentism as this paper is concerned with the possibility of presentist time travel. For a potential response to the truthmaker objection to presentism: Alex Baia, "Presentism and the grounding of truth," *Philosophical Studies*, forthcoming.

¹¹ A moment is identical to another moment if they have the same arrangement of matter/energy. Thus, if the past/future moment did not contain a time machine/traveler, the instantiated moment would violate the identity of indiscernibility: Hales, "Reply to Licon," 636.

¹² It might be that time travelers cannot alter past/future to which they traveled because they are not part of what constitutes the past/future. For example: Nicholas J. J. Smith, "Bananas enough for time travel?" *British Journal for the Philosophy of Science* 48, 3 (1997): 363-389.

Option (i) would undermine my response to Hales. However, unless Hales can motivate the inadequacy of options (ii) and (iii), the Humean supervenience assumption¹³ is not a problem for my response to the suicide machine argument. Hales has failed to explain why a machine that respects the identity of indiscernibility, with the capacity to rearrange moments such that they are indistinguishable from past/future moments, that respects the distinction between personal and external time, and the exclusive conception of the present is not a time machine.

For example, consider the Sally thought experiment:

Suppose that in a presentist universe, Sally enters a time machine, twirls the knobs to a time in the past and activates the machine. The time machine then proceeds to instantiate each moment between the departure moment and arrival moment (all of which meet the indiscernibility of identity), each to the exclusion of all other moments. Sally eventually arrives at her destination, and exits the time machine.

The Sally thought experiment meets Hales' criticisms, i.e. there is a distinction between personal/external times, the arrival moment exists to the exclusion of all other moments and so forth. This scenario is consistent with the constraints of presentism, but would not result in Sally's annihilation. If the Sally thought experiment is consistent with presentism and coherent, then the suicide machine argument fails, unless it is significantly modified.

Conclusion

Hales claims the time machine I proposed was not actually a time machine as it collapsed the distinction between personal and external time and failed to provide a sufficient difference-maker between traveling through time and merely rearranging the matter/energy in the universe. I argued this criticism ignores a central component of the time machine I proposed: the identity of indiscernibles must hold between the instantiated moment and some past/future moment. If the identity of indiscernibles is respected, there is an objective distinction between personal/external

¹³ The presentist can do little but accept Humean supervenience identity conditions of moments. In a presentist universe, what else could serve as identity conditions for moments other than that moment being arranged F-moment-wise? Suppose Bob traveled back to 1890 in a presentist universe. What makes the moment occupied by Bob identical to 1890? It would seem that the only answer is that the moment is arranged 1890-wise. It cannot be a relation between different moments because presentism denies that there are any other moments that could stand in such a relationship. If Humean supervenience is problematic, this reflects on presentism, rather than presentist time travel.

times, i.e. the time traveler instantly traveled, though as a matter of fact that the calendar changed substantially.

Finally, Hales' claims Humean supervenience prevents a time machine from traveling to a past or future moment, as such moments are identical to their arrangement of matter/energy and do not already contain a time machine or traveler. However, this only works if Hales has established that presentist time travel is suicide. Otherwise, it seems that the presentist could respond that if time travel in presentist universe succeeded, and if Humean supervenience holds of times, then it must be that the time traveler constitutes part of a moment in the past/future. Otherwise, Hales is correct: there could be no time travel to such a moment. Thus, Hales' fails to adequately respond to my objection to his suicide machine argument.