Presentism & Relativity

By: Steven Umbrello

I

In this short paper I will be explicating and evaluating the arguments presented by Keller and Nelson in their paper, *Presentists Should Believe in Time-Travel*. I will show that their presuppositions, which are essential to their arguments, have the potential to devastate their position. We will see that one of these presuppositions comes into conflict with the General Theory of Relativity, and I will demonstrate that this endangers both their own agenda and presentism as a whole.

II

Keller and Nelson (2001) attempt to show that there are at least *some* cases of time travel that are compatible with presentism, that is, the view that only the present is real (p.334). Before these scenarios are presented, they assess the *nowhere argument* (see Axiom 1)*,* which they claim offers a fundamentally incorrect interpretation of the presentist view and must as a result be dismissed*.* We will revisit the *nowhere argument* (NA) in Section IV.

Axiom 1

*The Nowhere Argument*

1. If time travel is real, and someone is a time traveler, then that time traveler either travels into the future or into the past.
2. The future and the past do not exist (the essential feature of presentism).
3. No one can travel to that which does not exist (denied by Keller and Nelson).

:. No one time-travels (i.e. time travel is impossible according to presentism).

They follow this dismissal of the NA with a short demonstrative scenario they entitle ‘Jennifer’s Journey’ (*KN,* p.335). Here they propose a scenario in which a young Jennifer is visited in 1985 by her future self of 2054, who is able to visit her by means of a time-travel machine. Her visit lasts an hour, during which she converses with her younger self, giving advice that will alter the course of her life. This change inevitably directs the course of this life to become that of the same individual who visited her in 1985 (*KN*, pp.335-6).

Keller and Nelson believe they can interpret this scenario from within a presentist framework. They begin by employing the four-dimensionalist perspective—that is, the notion that the present, past, and future exist and that time is a fourth dimension—to explain the scenario’s coherence, before posing the presentist interpretation as equally viable. They accomplish this by shifting the language of the scenario so to fit the conditions of a presentist reading (*KN*, pp.337-8). They then move on to address the issue of personal identity, a pervasive element that naturally accompanies stories of time travel. They conclude that if from the four-dimensionalist perspective there is no paradox then there is equally no paradox for the presentist (*KN*, pp.339-40). This is achieved by differentiating Jennifer’s *personal* timeline from an *objective, external* timeline: ‘It’s only in her personal time that the reappearance is a reappearance. But that’s OK, and it doesn’t lead to a paradox…’ (*ibid.*). By making this distinction they are able to remove the problem of time paradox.

 The next obstacle is that of causation. Scenarios that involve time travel often provoke questions regarding causation through time. They successfully demonstrate that the problems relevant to causation, if they are indeed problems at all, would not only cause issues for the possibility of time travel on a presentist account, but for time travel on *all* interpretations, including that of four-dimensionalism (*ibid.*). There are no premises that present issues for presentism exclusively, and so if we accept time travel generally, despite the existence of causal issues, then we must accept the possibility of a presentist account of time travel, too.

Keller and Nelson’s final argument attempts to conclude that presentist time travel is possible even if the presentist accepts endurance across time. They argue that Jennifer can possibly endure time-travel scenarios and thus that the ‘presentist endurantist’ need not subscribe to the impossibility of this endurance (*KN,* p.344). This is shown by way of examples of time travel where the traveler does not journey to a time of whose temporal sequence they are a part. By doing this, the endurantist need not swallow the notion of two Jennifers existing within the same timeframe.

The following section will offer my perspective on the strength of these arguments, as well as an objection which raises a serious problem with the basis for Keller and Nelson’s position.

III

Throughout their paper Keller and Nelson affirm that they do not claim that presentist time travel exists. Their purpose is simply to show that presentism is equally likely to validate time travel as four-dimensionalism. As already mentioned, they refute the *nowhere argument* because they believe it to be unsound: they refute Premise III (‘No one can travel to that which does not exist’) while implicitly affirming Premise II (‘The future and past do not exist’). In the following section I will argue that their avowal of Premise II leads to the undermining of their subsequent arguments.

*Presentists Should Believe in Time-Travel* denies the truth of Premise III by claiming it ‘proves too much.’ From here they would like to assume that presentism at least ‘makes it to the finishing line’ (*KN*, p.335). This is the presupposition they use as the basis for their subsequent arguments, but it is not this that I will refute—I will rather deny the premise they implicitly affirm, Premise II.

IV

Presentism claims that only the present is real. If this is the case then all things that happen, occur, and exist are only real if they do so in the present. We can extrapolate from this and say that any said event is, according to presentism, only real if they are situated in the present. Suppose, for example, that there are these two distinct events:

 E1: a train is moving east.

 E2: a man jumps up and down.

For both E1 and E2 to be *real* events, and not just temporally-tensed truths, they must occur in the present (at time *t*\*), i.e. simultaneously. This, therefore, presupposes *a priori* an objective framework of the simultaneity of events. This objective simultaneity is contrary to the widely-held notion (see Rea, 2005, p.31) of the Relativity of Simultaneity (RoS), which is an essential constituent of Einstein’s General Theory of Relativity (GTR).

Einstein claims that it is an essential feature of simultaneity that the events referenced (in this case E1 and E2) are independent from an absolute or objective time (Einstein, 2004, p.33). To suggest otherwise would be to invite pre-Relativity notions of time and space. As we have already seen, for both events E1 and E2 to be *real* events according to presentism, they must both occur at *t\**, which means they must be simultaneous. However, in the GTR we see that the simultaneity of events is actually relative, meaning that they occur at different times depending on the subject and reference. This entails that E1 would see E2 occurring at time *t*\* and E2 would see E1 happen at a different time, say *t1*. This, however, means that each event transpires at a different time; *ergo*, at least one is not happening in the present, which means that only the events occurring from the relative perspective of the presentist are real. All other events are unreal; they can be referenced only with temporally-tensed language.

I believe that the GTR and the RoS pose a serious challenge to presentism. By ignoring the RoS, Keller and Nelson resort to relying on pre-Relativity notions of time, thus making an unfair comparison between presentism and four-dimensionalism. Moreover, the Principle of Relativity (including the RoS) is contrapositive with the absolute simultaneity upon which presentism relies. This brings into question the truth of presentism as a veritable theory of time. Therefore, if this contradiction brings presentism itself under question, the arguments forwarded by Keller and Nelson are also suspect.

V

This paper has outlined the arguments presented by Keller and Nelson in their paper, *Presentists Should Believe in Time-Travel.* We have seen their attempt to argue for a coherent view of time travel on a presentist interpretation, and their subsequent fall into a fundamental presupposition that threatens this interpretation. I have demonstrated that the Relativity of Simultaneity - as proposed in the GTR – provides not only an objection to Keller and Nelson’s conclusions, but also to presentism as a whole. Overall, they provide satisfactory arguments for the coherence of presentist time travel, but only if we assume that presentism offers a viable account of time—which, as we have seen, is questionable.

Bibliography

Einstein, A. (2004). *The Relativity of Simultaneity*. London: Folio Society.

Keller, S. and Nelson, M. (2001). Presentists Should Believe in Time Travel. *Australian Journal of Philosophy*. 79 (3).

Rea, M.C. (2005). Four-Dimensionalism. In: Loux, M.J. and Zimmerman, D.W. *The Oxford Handbook for Metaphysics*. Oxford: Oxford University Press.