

TS1001: Is time-travel plausible: a critique of Lewis (1976) Paradox of Time-Travel

David Lewis has provided the most detailed and comprehensive defence of the coherence of time travel stories and it is instructive to examine his defence of the possibility of time travel when trying to determine if Time-Travel is plausible. Lewis rejects the metaphysical conception which denies the reality of the future and the past. The world we live in, according to Lewis, is a Parmenidean world: 'a four-dimensional manifold of events' and the occupants of the world are four-dimensional aggregates of stages-'timelike streaks'. However a time traveller is not like other aggregates; 'if he travels towards the past he is a zig-zag streak' (Lewis, 1976 P.145). There might also be stretched out streaks which are travellers into the future. This Parmenidean ontology of temporal stages at once removes the 'no destination' objection to time travel. Four-dimensional geometry provides the means of recording a time traveller's career.

Lacking introduction

Good discussion of key concepts

Time travel requires that two events are separated by unequal amounts of time. One way that our experience of time may not correspond to physical time is because it may be intermittent. This type of discrepancy between objective time and psychological time provides a sense in which time travel into the future is unproblematic (Dwyer, 1976). These 'Rip van Winkle' cases illustrate that experience may not coincide with elapsed time measured by clocks. The time travel envisaged by Lewis however involves the possibility of travel to the past - going causally upstream, so to speak - and that raises serious difficulties. The essential feature of paradox-generating time travel stories is that the departure from a particular place and time is followed (from the point of view of the time traveller) by arrival at the same place at an earlier time from the point of view of a 'sedentary' observer. Lewis believes that denying the reality of past and future events is as parochial as denying the reality of distant places.

Good use of formal language - although confusing in places

Pastness, presentness and futurity are not objective features of reality but reflect only the perspective on the facts which is the standpoint of the experiencing subject. The experience of a changing present does not reflect a change in facts at all, but only a change of chronological perspective, just as a change in spatial location effects a change in spatial perspective (Capek, 1961). On this view the temporal modalities of past, present and future do not mark any metaphysically significant distinction, whatever their importance may be for knowledge and practice. The commonly held conviction that there is a significant distinction between the past and the future is closely tied to the idea that cause cannot succeed its effect. The future seems to be causally accessible while the past is not (Smart, 1981). That indeed is one of the platitudes about what distinguishes the past and the future. It is no accident that those (like Lewis) who defend the possibility of time travel are leery about any deep metaphysical asymmetry between past and future. If we accept this metaphysical framework it may seem, as Lewis suggests, the problems raised by time travel are oddities rather than absurdities.

Good use of evidence, multiple viewpoints and references.

Having explained the consistency of time travel with his four-dimensional ontology, Lewis goes on to elucidate how the sequence of stages from which an individual is composed could be reversed in time. This involves reverse causation - a discrepancy between the direction of cause and the direction of time. Finally he provides a heroic attempt to defuse the threat of empirical paradox which arises because it seems that time travel would involve (or raise the possibility of) changing the past. There are also some related subsidiary problems which Lewis addresses, such as a puzzle about

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closed causal loops. Lewis believes that none of these difficulties are fatal to a coherent account of time travel.

Good critique
of Lewis's
ideas

This is a difficulty which is glossed over in Lewis's account- though in fairness it should be added that it is glossed over in other accounts as well. All individuals, for Lewis, are aggregates of the temporal parts (or stages) of which they are composed. But a traveller into the past is a topological anomaly unlike other aggregates. It sounds as though the time travelling individual is a perfectly orderly, if unusually oriented, aggregate of stages. But it is quite mysterious how some stage of an individual can have an earlier and a later stage at the same space-time location.

In conclusion, it seems that nothing in our experience rules out the possibility of psychological time continuing in reverse. In that sense backwards experience seems to be perfectly coherent - there is no obvious contradiction. It therefore seems that our conscious experience just happens to align with objective physical time but that it need not. But this is not easy to make sense of at all. To make good sense of it we would need to provide an account of causal interactions at the boundary of a backwards travelling (or time reversed) physical system. The problems that this raises are quite intractable. The double occupancy problem is one of the difficulties which illustrates that it is very difficult to make sense of continuous zig-zag streaks in space-time.

Good
conclusion.

Capek, M. (1961). *The Philosophical Impact of Contemporary Physics*. New York: Van Nostrand.

Dwyer, L. (1978). Time Travel and Some Alleged Logical Asymmetries between Past and Future, *Canadian Journal of Philosophy*, 8:15-38

Lewis, D. (1976). 'The Paradoxes of Time Travel', *American Philosophical Quarterly* 13:145

Smart, C. (1981). 'The Reality of the Future', *Philosophia* 10: 149

Correct
Harvard referencing
style