

Time, Tense, and Causation. By Michael Tooley. Oxford: Clarendon Press, 1997. Pp. xvi + 399. \$45.00.

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Our natural intuitions about the nature of time, Tooley maintains, tell us that the future does not exist, unlike the past and the present, and furthermore, that time is dynamic in some sense. However, he is critical of those who have championed the inclusion of these intuitions in metaphysical theories of time: proponents of traditional tensed theories. Their accounts, he argues, are ultimately untenable. Either they conceal inconsistencies and contradictions, or they do not adequately represent what time is like. Tenseless theories of time, by contrast, are logically more or less coherent, but the metaphysical picture of time that they naturally entail, being static and such that every moment of time is as real as every other, is unacceptable to him. Thus, faced with a bipolar debate about the nature of time, Tooley enters the fray with the intention of steering a middle path.

Time, Tense and Causation is a stimulating contribution to the philosophical debate about the nature of time. Tooley resists the temptation to align himself with either of the more traditional positions on the debate about tense. However, in his criticisms of each position he does tend to appeal to the arguments of their more long-standing opponents. That said, Tooley is offering us something genuinely new. His positive thesis is original and elegantly constructed, and deserves careful consideration. He weaves together his theories of time and causation, arguing that events can be causally related only in a dynamic world.

Thus, causation is basic both to temporal order and to the passage of time. The result is a robust metaphysical picture of the world, strengthened by the fact that its components provide internal support for one another. His intention of giving us a metaphysical theory of the nature of time which is at once intuitively appealing and logically coherent is admirable indeed.

Tooley characterizes the differences between traditional tensed and tenseless theories in terms of two particular points of disagreement. The points at issue are whether the world is static or dynamic, and whether tensed facts logically supervene upon tenseless facts or vice versa. Tooley sides with the tensed theorist in holding that the world is dynamic, and with the tenseless theorist in holding that tensed facts are logically supervenient upon tenseless facts. Crucially, however, he modifies the latter thesis to the claim that tensed facts are logically supervenient upon what tenseless facts are actual as of different times. He thus introduces the notion of 'actuality as of a time', which seems to underpin not only his account of how the world is dynamic, but also many other of his key theses, for example, the unreality of the future as contrasted with the reality of past and present.

How are we to understand this notion of actuality as of a time, and how does it support Tooley's contention that the world is dynamic but not intrinsically tensed? He introduces the notion of actuality as of a time in the context of drawing the distinction between a static and a dynamic conception of the world. On a static conception of the world, change in an object is simply that object's having different properties at different times. Likewise, change in the world as a whole is simply the world's having different properties at different times. On a dynamic conception of the world, the world as a whole changes only if the totality of temporal facts or states of affairs is different at different times. Actuality itself is thus understood as temporally relative rather than absolute, so

the totality of facts that are actual as of one time may be different from the totality of facts that are actual as of some other time. Intuitively, the dynamic conception captures the notion of the passage of time, as it invites us to think of the passage of time as the successive actualizing of present states of affairs.

The conjunction of a dynamic conception of the world with the thesis that tenseless facts logically supervene on tensed facts (or that tensed facts are ontologically primitive) gives rise to the conclusion that the totality of facts which are actual as of any moment is inconsistent. Take the present moment for example. The totality of facts which are actual as of the present moment, since it consists of past and present fact, includes the fact that dinosaurs now exist and the fact that dinosaurs do not now exist. These facts are irreducibly tensed, not temporally relative, so it is not open to us to render them consistent with one another by appeal to the different times at which they are present fact. Tooley avoids this problem by rejecting the thesis that tensed facts are ontologically primitive. His theory is tensed only insofar as it incorporates the dynamic conception of the world, and he cashes this out in terms of the totality of *tenseless* facts that are actual being different at different times.

The notion of actuality as of a time is thus crucial to Tooley's account. The present, at a given time, consists of those states of affairs that are actual as of that time, and which are such that there are no later states of affairs that are actual as of that time. Thus, his position entails that the future is not real. However, Tooley retains and, in places depends upon, the notion of actuality *simpliciter*, insisting that both kinds of actuality are primitive and unanalysable concepts. He draws a distinction between the concept of a total, dynamic world and the history of a dynamic world up to some point in time. To my mind this distinction raises two questions. Firstly, is there anything genuinely *dynamic* about the concept of a total dynamic world? A total dynamic world would be a world which is actual

simpliciter, and in which, for every moment, what is actual as of that moment consists only of those tenseless facts that are present and past at that moment. I have to admit to being simply perplexed as to how this describes a dynamic world. Secondly, since there is a need within Tooley's theory for both concepts of actuality, is there any reason why we should take them both as primitive and unanalysable? It seems to me that a case can be made for arguing that the concept of actuality as of a time is parasitic on the concept of actuality *simpliciter*. Arguably, 'E is actual as of time t' can be analysed as 'E is actual (*simpliciter*) and E occurs at t'.

Time, Tense and Causation exemplifies philosophical integrity in the highest degree. Tooley refuses to compromise either his intuitive beliefs about time or his metaphysical rigour in presenting his arguments. The result is a well researched, elegantly crafted account of the nature of time that is expounded clearly and defended thoroughly. The book provides much fertile ground for the growth of new ideas and new debates in this field. I recommend it to anyone seriously interested in the philosophy of time.

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