

Moore holds that “for any representation, there is a finite extension of our powers enabling us to know whether or not it is true”; following Joseph Melia, he formulates his anti-realism this way and refuses to say that “for any true representation, there is a finite extension of our powers enabling us to know that it is true” (p. 139) in view of Fitch’s argument that if all truths are knowable then all truths are known. But what seems to motivate his anti-realism is a Dummettian argument which concludes “the proposition must not be true without our being able to tell that it is” (p. 242), the form of anti-realism previously rejected.

The book’s flaws contrast with very many shrewd and subtle points made in passing. If one must listen to the unfresh sirens of transcendental idealism, one should tie oneself to the mast rather more firmly than Moore has done.

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*Time, Tense, and Causation*

By MICHAEL TOOLEY

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A familiar distinction in the philosophy of time is that between ‘tensed’ and ‘tenseless’ theories of time. Another, often thought to coincide with the first, is that between ‘dynamic’ and ‘static’ theories of time. Michael Tooley clearly thinks that these two distinctions are effectively just one and the same. In this book, he argues in favour of a tensed theory, but one which, as he himself emphasises, has a good deal in common with many tenseless theories. In particular, he does not believe that there are irreducibly tensed facts, much less that tenseless facts are reducible to tensed ones. Where his theory differs from tenseless, or static, theories of time, however, is in denying the reality of the future while accepting the reality of the present and the past. Amongst well-known philosophers of time, the one whose view comes closest to Tooley’s appears to be C.D. Broad. Like Broad, Tooley believes in the passage of time and thinks that it consists in the continuous addition of states of affairs, or facts, to reality. On this view, what is actual at, or ‘as of’, one moment of time is only a proper part of what is actual at, or ‘as of’, a later moment of time. The ever-changing present moment lies at the leading edge of this ever-growing totality of actual states of affairs (none of which, in Tooley’s opinion, is irreducibly tensed). Clearly, this view of time has a certain intuitive appeal, but Tooley thinks that there is also good reason to accept it (quite independently, incidentally, of whether one believes in determinism or indeterminism). His main argument is a complex one, the general thrust of which is that causation—which involves the bringing into existence of one event by another—is only possible in a world containing time as Tooley conceives it to be. Much of the basis for this argument lies in earlier work that Tooley has done on the theory of causation, and he also uses that work to good effect here in arguing for a causal theory of temporal order and of the direction of time. An important implication of his views on these matters is that backward causation is logically impossible.

Tooley recognises that there are many apparent difficulties which a theory of time like his must overcome. Thus, for example, there is the difficulty of explaining how it can be logically true that either there will be sea fight tomorrow or there will not be a sea fight tomorrow, even though it is supposedly neither true nor false that there will be a sea fight tomorrow and neither true nor false that there will not be a sea fight tomorrow (because reality currently lacks states of affairs capable of making either of these statements true or false). Tooley deals with this problem by distinguishing between 'logical' and 'factual' truth, and in the course of doing so makes some interesting observations about three-valued logic and the truth-functionality of the standard sentential connectives. Again, there is the difficulty of explaining how a theory of time which draws an ontological distinction between the past and present on the one hand, and the future on the other, can accommodate the relativity of simultaneity which is a feature of the Special Theory of Relativity. Here Tooley argues that it is possible to construct a theory which at least matches the Special Theory of Relativity for empirical adequacy—indeed, which has greater explanatory power than the latter theory does—and yet which implies the absoluteness of simultaneity. Such a theory is committed to the existence of absolute space, but this again is something which Tooley is ready to defend. His central point against the Special Theory of Relativity is that there is no empirical evidence in support of the thesis that the *one-way* speed of light in vacuo is constant in all inertial frames of reference, even though there is plenty of evidence that the average speed of light for a *round-trip* from A to B and back to A is constant in all inertial frames. His own rival theory explains the latter fact while denying the relativistic thesis concerning the one-way speed of light, thereby undercutting the relativistic grounds for holding that simultaneity is not absolute. Tooley argues, furthermore, that acknowledgement of the absoluteness of simultaneity is required in any case in order to accommodate the phenomenon of the collapse of the wave-packet in 'entangled' quantum mechanical systems whose parts are widely separated in space.

In defending his theory of time in the face of these and other difficulties, Tooley demonstrates great ingenuity and versatility as well as enviable erudition. Much of what he has to say is extremely persuasive, and he always argues with admirable clarity and consistency. Even so, I cannot help feeling that there is a fundamental obscurity at the heart of his theory. Although he proclaims himself a defender of a 'tensed' view of time, it seems evident that what really appeals to Tooley is the thought that time is 'dynamic' rather than 'static'. However, the dynamic/static distinction, unlike the tensed/tenseless distinction, appears to make appeal to metaphors of movement or change which cannot coherently be cashed in literal terms. When it is said, as Broad and Tooley want to say, that reality is 'added to' or 'grows' as time goes by, what kind of process of 'growth' is this, and how does it relate to those ordinary processes of growth whereby, for instance, a heap of stones grows as more and more stones are successively added to it? The reality of which Tooley speaks is, as he sees it, the totality of states of affairs that are actual at, or 'as of', a certain time, and he regards such a totality as being

different at different times. But this 'growth' of reality must, it seems clear, be utterly unlike the sort of growth that can be undergone by material objects over time. As such material objects grow, they get spatially bigger, so that at a later time they occupy more space than they did at an earlier time. But when *reality* 'grows', as Tooley and Broad conceive of this as happening, this is not a matter of the entire world taking up *more space*, but rather a matter of there being more that has happened—that is, a matter of reality taking up, as it were, *more time*, or acquiring a more extended duration. Now, of course, even on a 'tenseless' view of time, which accords equal reality to past, present and future, individual persisting objects have longer pasts at later periods of their careers than they do at earlier periods: that is just trivially true. But the Tooley-Broad claim is not meant to express a triviality of this sort concerning the world as a whole. However, the trouble is that I find myself unable to conceive clearly what their claim *does* mean, save in terms of the hopeless metaphor of a growing pile of stones, or a wall that is continually being extended by the addition of new bricks. Broad, to his credit, seems to have recognised this difficulty, and responded to it by distinguishing between change in time (the sort of change which a growing pile of stones undergoes) and change *of* time—the sort of change supposedly undergone by reality as time 'passes'. But that seems merely to label the supposed distinction, without in any way explaining it or rendering it clearly intelligible. As for Tooley, however, I do not think that he does recognise any such difficulty: but whether this is because there is, after all, no such difficulty to be found, I leave for other readers of this excellent book to judge for themselves.

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