

A NEW PROBLEM FOR THE A-THEORY OF TIME

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The A-theory or ‘tensed’ theory of time says that the A-series of McTaggart’s famous argument is real.¹ This means that the properties picked out by terms like past, present and future - known as ‘tenses’ - are mind-independent properties of times. Consequently on this view the ‘flow’ or ‘passage’ of time is a feature of mind-independent reality. The B-theory or ‘tenseless’ theory says the opposite - that tenses have no mind-independent reality (though they might involve relations between times and, for instance, utterances) and that the apparent flow of time is merely psychological. Debates between A- and B-theorists have continued with increasing intensity in recent years.² In this paper I shall put forward a simple argument which poses a new problem for the A-theory. I shall first go through it in outline then explain it in more detail.

The argument, in a nutshell, is as follows. Experience provides each of us with a strong intuitive impression that time flows. The A-theorist takes this as a reflection of the fact that time really does flow. But on any physicalist or supervenience theory of the mind the nature of experience is determined entirely by the physical state of the world - experience could not be different without the physical state of the world being different. Now our understanding of the role of time in physical science suggests that the putative flow of time has no role in determining the physical state of the world. It follows from this that the flow of time could have no role in determining the nature of experience. The intuitive impression that time flows thus arises quite independently of the putative real flow of time. Consequently the nature of temporal experience provides no reason to posit a real flow of time; and I shall argue that it follows in turn

¹ J. M. E. McTaggart, ‘The Unreality of Time’, *Mind*, 18 (1908), pp. 457-484.

² For book-length defences of the A- and B-theories see Quentin Smith, *Language and Time* (Oxford: Oxford University Press, 1993) and D. H. Mellor, *Real Time II* (London / New York: Routledge, 1998) respectively. For further relevant examples of current debates see the papers collected in L. Nathan Oaklander and Quentin Smith (eds.), *The New Theory of Time* (New Haven and London: Yale University Press, 1994) and also Robin Le Poidevin (ed.), *Questions of Time and Tense* (Oxford: Clarendon Press, 1998).

that there can be no a priori reason either. I shall now go through each step of this argument in detail.

It appears to be common ground among most A- and B-theorists that experience provides a strong intuitive impression that time flows. This is often assumed to favour the A-theory; for it seems to be implicitly assumed that the A-theory can account for the way time seems to flow by appealing to the fact that it really does flow. A certain onus is placed instead on the B-theorists to account for the temporal features of experience in a way which is consistent with their denial that the flow of time is real. Thus L. Nathan Oaklander remarks that:

Regardless of how many arguments Mellor, Smart, I, and other defenders of the tenseless theory offer, we will never persuade tenses to abandon their view unless we can explain those features of our experience of time that seem to require that time be tensed. It is an impression deeply felt by all of us that time, or events in time, flow from the far future to the near future and then, after shining in the spotlight of the NOW or present moment, immediately recede into the more and more distant past. But does this impression reflect a basic truth about time?³

Accounting for the temporal features of experience certainly poses a difficult and important task for the B-theory. But the A-theory owes us an account of these features of experience too - one which shows how the putative real flow of time can be a factor in determining the nature of temporal experience. I shall argue that no such account is possible.

The reason why the A-theorist's task is impossible is that the flow of time, as it is normally construed, couldn't cause the kinds of things it would have to cause in order for it to have a role in explaining why temporal experience is the way it is. The features of experience that give the impression that time flows are part of the way things seem to the subject; they are not merely relational states. That is to say, the kind of temporal experience that we have could not consist in merely experiencing times which are as a matter of fact tensed because the putative tenses show up in the way things seem to the subject. Now on any physicalist or supervenience theory of

³ Oaklander and Smith, *op. cit.*, p. 289.

the mind the way things seem to the subject is determined by some aspect of the brain state; consequently if there are such things as mind-independent tenses they must have a role in determining brain states.

However only certain kinds of things can have a role in determining brain states. The brain is a part of the physical world and the succession of its states is determined by the physics of the brain and its environment. If someone were isolated within a limited environment then in principle the physics of the system comprising the brain and its environment would determine the subsequent states of the brain and thus the experiential states of the subject. Even if a physicist could not predict these states in practice, and even allowing for quantum indeterminacy and the like, the system would still evolve in accordance with the laws of physics and nothing else.

Now the laws of physics do not require that time flows. The mathematical equations which describe the evolution of a system over time contain a variable t for time, into which one can substitute arbitrary values to determine the state of the system at a given time. The notion of flow doesn't enter the picture at all. Physics does of course require there to be a temporal ordering (a B-series) and the position of a given event in this ordering can be relevant in determining its effects. But this position is relevant only because it is relative to other events; the absolute temporal locations determined by the tensed properties of an A-series have no such role in determining physical states.

Note that although in the past some writers thought that the tenseless nature of physical laws was alone sufficient to refute the A-theory, that isn't the argument to be given here.⁴ Moreover it is of course necessary to use tensed vocabulary when applying physical laws in practice; there will be statements like 'it is now three o'clock and the system is in state S_1 ; the laws of physics show that the system will be in state S_2 five minutes after it is in state S_1 , so it will be in state S_2 five minutes from now'. But what matters for the present argument is just that no tensed properties have a role in determining the states S_1 and S_2 themselves; they are the same physical states no matter whether they occur in the past, present or future.

⁴ See for instance Bertrand Russell, *An Enquiry into Meaning and Truth* (London: Allen and Unwin, 1940) and A. Grünbaum, *Modern Science and Zeno's Paradoxes* (Middletown, CT: Wesleyan University Press 1967).

These considerations make it clear that if there were such a thing as the flow of time it would have no role in determining brain states and consequently it would have no role in determining the nature of experience. The impression that time flows thus arises quite independently of whether or not it really flows. This is not to suggest that the putative flow of time must be construed as altogether causally impotent. All that need be said is that the flow of time would be powerless to cause the sorts of things it would have to cause in order to be experienced. Or, to put it in a way which avoids mentioning causation at all, the flow of time can have no role in determining the nature of temporal experience because it plays no role in determining brain states. Note that the argument does not say that we should reject the existence of anything which cannot exert causal influence on us; it applies only to what is reflected in experience.

There is a useful analogy between the present argument and a certain argument against those theories in the philosophy of mind which posit epiphenomenal qualia. Epiphenomenal qualia are supposed to be features of consciousness which give our experiences the particular subjective qualities they have. But although the putative epiphenomenal qualia are effects - they are caused by states of the brain - they themselves have no effects in the physical world whatever, and consequently are missed out by physicalist descriptions of the world.

Daniel Dennett points out just what's wrong with this view in *Consciousness Explained*:

Suppose that Otto insists that he (for one) has epiphenomenal qualia. Why does he say this? Not because they have some effect on him, somehow guiding him or alerting him as he makes his avowals. By the very definition of epiphenomena (in the philosophical sense), Otto's heartfelt avowals that he has epiphenomena could not be evidence for himself or anyone else that he does have them, since he would be saying exactly the same thing even if he didn't have them.⁵

⁵ Daniel C. Dennett, *Consciousness Explained* (London: Penguin, 1991), pp. 402-3. Dennett's argument follows those of I. Fox, 'On the Nature and Cognitive Function of Phenomenal Content - Part One', *Philosophical Topics*, 17 (1989), 81-117, and G. Harman, 'The Intrinsic Quality of Experience', in J. E. Tomberlin (ed.), *Philosophical Perspectives, 4: Action Theory and Philosophy of Mind* (Atascadero, CA: Ridgeview, 1990).

Consequently we cannot have any evidence for the existence of epiphenomenal qualia and there seems no sensible option but to reject them. I suggest that we can regard the flow of time as similarly epiphenomenal. Our avowals that time seems to flow can be no evidence that it does flow for we would be saying the same things even if it didn't.

We have shown that experience would be just the way it is even on the assumption that there is no real flow of time. Since experience thus provides no support for the A-theory it seems in order to reject it. But perhaps the A-theorist will now claim that there are arguments in favour of the A-theory which do not appeal to features of experience, and which are thus immune to the above criticisms. However if the above considerations are accepted any such a priori arguments would face a formidable difficulty. The problem would be to make clear just what was being claimed. Given the above arguments, the a priori A-theorist would have to accept that whatever the putative A-properties are, they have nothing to do with what is reflected in experience. It would therefore be necessary to find suitable terms with which to refer to these putative A-properties. But recall that we took as our starting point the fact that experience provides a strong intuitive impression that time flows. We can of course report on this using tensed vocabulary (as Oaklander does when he uses the words 'past', 'present' and 'future' in the quote above). Consequently the normal tensed vocabulary is unavailable to the A-theorist because it is already in use to describe what is reflected in experience, which it has already been accepted has nothing to do with A-properties. This implies that any intrinsic properties of times posited by an a priori argument can have nothing to do with pastness, presentness or futurity. So nothing recognisable as the A-theory can be salvaged.

Carnap and others used to reject as 'metaphysics' anything which could not be reduced to experience. It is important to see that the present argument, by contrast, concerns only that which is reflected in experience. It shows that given a physicalist or supervenience theory of the mind nothing that is reflected in experience can belong within the realm of metaphysics. The dualism of the A- and B-series - like the Cartesian dualism of physical and mental substance - comes unstuck through a combination of the impossibility of explaining how the two sides could interact and the unintelligibility of claiming that they don't. A modern understanding of the place

of the mind in the natural world thus shows the flow of time to be nothing more than a last imaginary ghost in nature's machinery.⁶

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