

## Presentism and Physicalism<sup>1</sup>

Presentism is the view that only the present exists, which mates with the A-theory's temporal motion and non-relational tense. After examining the compatibility of a presentist world with both special relativity and wavefunction collapse, I invoke physicalism to argue against presentism. I will show why anyone who accepts even a modest physicalism about the mind should have high credence that ours is a block, rather than a presentist universe.

Presentism is the metaphysical doctrine that the present is ontologically privileged, being all that exists. It combines with the A-theory (based on McTaggart 1908) which holds that any given time qualifies as either past, present, or future non-relationally, and also holds that if a time's status is 'present' it will immediately change to 'past', while if 'future' it will eventually change to 'present'. I will just say 'presentism' for presentism plus the A-theory, and will address A-theoretic issues when they apply. The A-theory is also sometimes combined with the growing-block view, under which both the present and past exist but not the future; however, the topic of this paper is presentism. The A-theory contrasts with the B-theory, which holds that any given time's being past, present or future is a relationship with some other given time, where it is a matter of being before, coincident with or after that other time. The B-theory usually mates with eternalism, which holds that things at all times are equally real without regard for whether they are in our past, present or future. The result is the block universe view so consonant with physics, which is the consensus among physicists and to a lesser extent philosophers. While a minority position, supporters of presentism continue a lively debate within what has become an extensive literature.

Many arguments have been offered against presentism. How, for example, could we refer to events and things in the past if they do not exist? Then there are concerns about the present's problematic motion raised by Smart (1949). If it amounts to one second per second, is that coherent? Does it require a second time axis? An infinite regress of time axes? A more acute problem may be the supposed incompatibility of presentism with special relativity analyzed by Putnam (1967). But the argument I will offer here centers on physicalism.

Under presentism the world is a three-dimensional space of genuine change, which can be mapped into the space-time representation used by modern physical theories as a hypersurface that represents what exists, which moves as time passes, generating a foliation. Hypersurfaces in the foliation have a privileged orientation, representing frames in privileged spatial motion, in clear violation of the principle behind SR that says no particular inertial frames are preferred.

And while this is true, the argument put this way might not be too damaging to presentism. Presentism appears not to be a *physical* theory about the dynamics of the world, but a *metaphysical* theory that regulates existence. To argue that this metaphysical posit needs to respect a principle of physics that prohibits preferred frames verges on committing a category mistake (although see Notes 4 and 5).

This criticism of the argument assumes that the physics and metaphysics are orthogonal, so our world could be either of two possible worlds that are physically equivalent in some relevant sense but differ

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metaphysically.<sup>2</sup> The presentist and block versions of our world clearly differ physically as well, since the block contains so much more. Yet the worlds can be relevantly equated in the sense that there will never be any inconsistency between their fundamental physical facts<sup>3</sup> (FPFs) or their physical laws, because these fit those facts.<sup>4</sup> The comparison would match the presentist world's three-dimensional space with a subset of the block world's space-time defined by an appropriate privileged hypersurface, different depending on the time of the presentist world's 'now'. There should be no problem having the FPFs of the two worlds match this way, particularly if physics is local,<sup>5</sup> since the block version of our world is in effect the integrated history of all the dynamics that ever occur in the presentist version.

Would the corresponding inhabitants' experiences in the two worlds also match? Some would say no, arguing that even if we set aside consideration of the moving present, the absence of *existence* under presentism beyond what maps into the block world as an infinitesimally thin hypersurface would lead

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<sup>2</sup> Some might object that there cannot be such a pair of metaphysically possible worlds because whichever metaphysics obtains in actuality does so of metaphysical necessity. This seems wrong to me. The block world could be defined as the presentist world with an added fourth dimension having opposite sign in the metric, and either its A-theoretic status removed or an A-theoretic status of 'present' with zero rate of change. I do not see why presentism would then be metaphysically necessary and a world with these additions and subtractions metaphysically impossible. Both seem contingent. If not, I would bet it was the presentist world that was metaphysically impossible thanks to the incoherence of the A-theory (and Proser's 2013 in effect argues for its incoherence) but in that case no further argument against presentism would be needed. Finally, if the objection was correct, then arguments in this paper involving the two metaphysically possible worlds would need to be reworked in terms of epistemically possible scenarios.

Why do I think the whole block world might have an A-theoretic status of 'present'? Because the block world is *nothing but* the non-relational present: it is filled with all the events that occur, whose occurrence is invariably in the 'present'. On top of this absolute 'present', beings in that world impose a mind-dependent relational B-theoretic system of tense: relational to each thought or experience.

<sup>3</sup> Unless some strange emergentism sensitive to the metaphysical difference prevents the worlds from having consistent FPFs. There also might be, but I doubt there is, the problem described in Note 5.

<sup>4</sup> While our relativistic physical theories have equal empirical adequacy in the presentist and block versions of our world, there is a sense in which the physics differs because theories that might be realistic in the block world are merely instrumental in the presentist world. Lorentz transformation, which involves a kind of rotation between space and time, cannot be realistic under presentism because the temporal dimension has no extent. Manifestly covariant theories that depend on it would be mere instrumental conveniences. Realistic physics, in the sense of physics that applies to existent things, could only involve Galilean transformations, where relativistic effects would involve things like genuine increases in the mass of objects in motion relative to the frame of absolute rest in which the speed of light is genuinely isotropic. Also, distant simultaneity would not be what relativity's operational definition says. This realistic physics would be ugly and unsymmetrical, and would underly the elegant covariant instrumental theories that would no doubt be the only theories in use. This argues for accepting block metaphysics, which would allow the ugly to be discarded and the elegant theories to be understood as realistic.

<sup>5</sup> Known physics is local with the possible exception of quantum wavefunction collapse, where the Bell inequalities and corroborating experiments show that the collapse of spatially extended entangled states during quantum measurement appears non-local. The consequences depend on the interpretation of QM. For my own part I am committed to the modern Everett interpretation with decoherence, which is local, realistic, unitary and without objective collapse, so I will proceed as if all physics is local, meaning QM is a non-issue for presentism. With respect to realistic non-local interpretations like Bohm and GRW, I do not see the 'coordination problem' for presentism described by Callender (2008) because of non-realism about Lorentz transformation under presentism (see note 4). Whatever their motion, entangled states would only evolve and thus collapse within the 3-space of existence where only Galilean transformations are realistic. A different problem arises instead: while entangled states in the presentist world would be limited to inhabiting what is a preferred hypersurface from the perspective of the block world, that is not true of entangled states in the block world. Hence the *physics* and FPFs might actually differ between worlds in an interpretation-dependent way. Then my arguments that match FPFs between worlds would need to be restructured. Finally, if instrumentalism about collapse is true, then the significance of non-locality is unclear.

to different experiences than in the block world itself where all times exist. Nevertheless, physicalism *requires* that all experiences match.

Physicalism is sometimes defined as a supervenience thesis where, for example, all facts supervene on the FPFs. Yet supervenience is strictly just correlation, which fails to determine what the supervening facts are. Physicalism should rather be defined as something like the thesis that all the contingent facts of worlds like ours are determined by their fundamental physical facts, perhaps by physical realization as Melnyk (2003) argues. For our current purposes we need only appeal to physicalism\*, which I define as physicalism relieved of responsibility for solving the hard problem of consciousness, meaning the FPFs do not need to determine whether there is something that it is like to be us. While physicalism is disputed, I hope physicalism\* is acceptable to most.

Since the FPFs of the block and presentist versions of our world are consistent, the somewhat coarser-grained physical facts of the two worlds will also be consistent: for example, the configuration of print on the pages of writings about the experience of time, as well as all other writings about any subject including firsthand reports of phenomenal experiences of any kind and of intuitions about any topic, and also what is said about any of these things in oral comments and discussions that involve physical sounds. And it would be bizarre to the point of serving as a *reductio* of this possibility if the experiences, thoughts and other mental events that lead to the production of any such identical writings differed, so that some of the authors' divergent intent was disconcertingly and inexplicably foiled, making them write something identical that they did not intend. To prevent this the relevant mental states must also match, even though physicalism\* has not yet been invoked: only the more modest physicalism implicit in the above. But what is reportable, being causal, is outside the hard problem's area of concern, so physicalism\* does apply, meaning that the FPFs fix all the facts, whether reported or not, about the reportable content of experiences of any kind, and also all the facts about reportable intuitions, thoughts, considered judgments, beliefs and other mental states and events, all fixed identically since our brain's act of physically realizing each such mental event in the presentist version of our world would also be found at the appropriate space-time location in the block version and vice versa. And likewise for all the reportable mental consequences that follow from other reportable mental states and events.

So the actual world is one of two metaphysically possible worlds (assuming presentism and the block universe are the only choices) but our experiences in those two worlds are identical,<sup>6</sup> as are the beliefs we hold about which of the worlds is ours. Epistemically, this means that our belief about the metaphysics of time is *insensitive* whether we believe our world is a presentist world or a block universe. Insensitivity means it is *not* the case that we would not hold our belief if it was false. Regardless of which of the worlds we believe is ours, our actual world could be the other.

So what can we do? It depends on our epistemology. Taking a skeptical view, the insensitivity of belief in either possibility means deciding between them is a waste of effort. I will instead adopt the view that while our experience of the two worlds is the same, something *about* human experience may be such that it gives us justifiably high credence that our world *actually is* a particular one of these two.

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<sup>6</sup> This conclusion as it concerns any A-theory world is not new, appearing in Price's (1996: 16) popularization, and more recently in Proser (2007). When Price wrote his breezy presentation, which jumped straight from his conclusion to the further conclusion that ours is a block universe, I suspect he knew he had struck a mortal blow against credence in both presentism and other forms of the A-theory. Yet debate has continued. My goal is to finish the job, trying not to omit steps, where I have been as explicit as possible in laying out both the argument for identical experience and the coming argument, which fills the balance of this paper, that we should as a result have high credence that ours is a block and not a presentist universe.

Starting with humanity's empirical experience, which has guided the development of our physical theories, the block universe is motivated by its naturally falling out of relativistic physics, which favors credence in that world even though empirical experience cannot decisively arbitrate between it and the other.

Moving on to phenomenal experience, the whole motivation for presentism is its fit to that experience. But our phenomenal experience would be the same in the block world. So what goes on there? While there are scientific explanations that invoke, among other things, cognitive science along with elementary thermodynamics to explain why our experience of time is wholly illusory, the explanations are not fully established, so it may seem to doubters that such proposals are merely just-so stories developed to match our experience. Yet now we are coming to the point. In the block world our experience *cannot* be explained by, or occur in virtue of the metaphysics of a moving ontologically privileged present because that metaphysics simply does not obtain in that world. It *must* be explained by the completed versions of the scientific explanations being developed, or by other explanations that are likely to be of a similar kind: reductive explanations that in concert with physicalism explain away our experience of time as wholly illusory. In addition, we can be *certain* that there exist sound explanations (not merely just-so stories) that can explain away our experience of time, because these must be in effect in the block world, and in fact in both worlds.

To see why, consider how things are in the presentist world. What explains the experience of time that motivates some of its inhabitants to write up conclusions in favor of presentism? Well nothing physical differs, so the very same explanatory facts must obtain in the presentist world as in the block world, meaning that the same explanations that elucidate, with the help of physicalism\*, why our experience of time is wholly illusory must be in effect in the presentist world too. They must be in effect in *both* worlds as long as the block version of our world is a metaphysically possible world. Thus regardless of which world is ours, the metaphysics of the presentist world can have *nothing to do* with the reasons why a philosopher favors presentism, as long as that person's views are motivated by their phenomenal experience of time or the intuitions that result: but what other motivation would there be? Even if ours was the presentist world, the presentists in it would hold their beliefs for reasons that they themselves would judge to be deceptive if they knew what they were, so the best they could accomplish was their being coincidentally right in the fashion of a Gettier case.

In conclusion, empirical experience favors credence in the block world. Phenomenal experience not only does not support credence in presentism, it can reasonably be taken to reduce it thanks to its being demonstrably deceptive. Together they make clear that anyone who accepts even a modest physicalism about the mind should have high credence that ours is a block, rather than a presentist or other A-theoretic universe.

## References

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