

*This is an excerpt from a report on the Temporal Experience Workshop at the University of Toronto in May of 2013, written by Kevin Connolly, Mike Arsenault, Akiko Frischhut, David Gray, and Enrico Grube, available at [http://networksensoryresearch.utoronto.ca/Events\\_%26\\_Discussion.html](http://networksensoryresearch.utoronto.ca/Events_%26_Discussion.html)*

## **1. What can we learn about the nature of time from the nature of ordinary experience?**

Physics attempts to give a complete, objective account of temporal reality, the “god’s eye view of time.” Many metaphysicians think that physics is the only source of empirical evidence we need to give an account of the fundamental nature of time. But some philosophers think that providing an adequate account will also require consideration of evidence drawn from ordinary experience. In her talk, Laurie Paul discussed two ways in which facts about ordinary experience might be thought to be relevant to metaphysical questions about time.

First, if ordinary experience presents us with features of temporal reality that are not adequately captured by the account of time that we get from fundamental physics, then that might give us a reason to augment that account. Paul considered an argument offered by Tim Maudlin (2002) and others that our ordinary experiences as of passage and change license positing a metaphysically fundamental “temporal arrow” not posited by contemporary physical theory. According to the argument, ordinary experience presents the world as containing such a temporal arrow, and this gives us a reason to believe that there really is such an arrow.

In response, Paul first noted that such a view assumes that ordinary experience reveals the fundamental nature of reality to us directly. She then argued that there is no good reason to accept this assumption. First, she observed that it is unclear what plausible epistemological story might underwrite such an assumption. (Should we think, she asked, that we have a special perceptual faculty that somehow lets us directly perceive the fundamental structure of reality?) Second, she argued that we could provide a satisfactory explanation of why ordinary experiences present the world as containing a temporal arrow without modifying the account of time that we

get from physics. Cognitive science and psychology, she argued, have shown that ordinary experiences are “highly constructed.” That is, how the world perceptually appears to us is in large part the result of the assumptions our perceptual systems make about the external environment. (This point about perception was emphasized by two other conference participants in their talks, Alan Johnston and Josh Tenenbaum.) The perceptual appearance of a temporal arrow, then, can plausibly be explained away as a mere byproduct of the way our perceptual systems construct our experiences.

Those who agree with Paul debate over how a subjective perspective may be integrated. “Inflationists” postulate fundamental metaphysical properties to explain the temporal features in question (for such a view about passage, see Craig (1998), and Schlesinger (1982), among others). On these views, a primitive directional property grounds the inherent directionality of time (Maudlin 2002). Others, like Paul, think that such non-reductivist positions rely too heavily on the assumption that the phenomenal features of our veridical perceptual experiences intrinsically match the features of the world. Paul rejects such an assumption, arguing that there is sufficient empirical evidence to show that experience is highly constructed. Paul herself is a reductivist, albeit one that aims to integrate the subjective perspective by looking at cognitive science to understand better the nature of experience.

Those who disagree with Paul fall into two camps. “Eliminativists” deny that there is anything to explain: if science is correct, then time, *as we experience it*, is an illusion (for such a view about passage, see Williams (1951), Mellor (1998), and Le Poidevin (2007), among others). ‘Minimalists’ deny that there are any features of time which are not reducible to those determined by science. According to one such theory, the direction of time is reducible to the

global entropy gradient (see Lewis (1979), and Sklar (1985), among others). That is, the direction of time is fully explained by the fact that entropy increases towards the future.

We said that Paul discussed two ways in which facts about ordinary experience might be thought to be relevant to metaphysical questions about time. A second way is as follows. Even if explaining the appearance of a temporal arrow in the external world does not require positing the existence of a metaphysical fundamental temporal arrow, perhaps explaining the way our experiences themselves seem to us to change will require augmenting the account of time that we get from contemporary physics. Ordinary experiences are a dynamic feature of reality in their own right, and perhaps explaining their subjective character (which contemporary physics does not purport to explain) will ultimately require accepting the claim that the world contains a metaphysically fundamental temporal arrow—a *subjective* temporal arrow.

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