

## ***Four Dimensionalism*—Reading group 2**

Are objects three-dimensional and wholly present at any given time, or are they four-dimensional, merely having particular temporal parts at particular times (and hence not being wholly present at any given time)? In *Four Dimensionalism*, Sider argues for the second position ('perdurantism') and against the first position ('endurantism').

One thing which came out of last week's discussion is that there are some other debates which are related to the endurantism/perdurantism debate, and which in a sense are antecedent to it. We might say that Sider presupposes that compelling answers to the following questions can be given:

1. How does Sider identify what the spacetime worms are to start off with? (This was the issue discussed by Catherine, Matt, and Jack.) He hasn't said much yet: one wants to say something like the interesting worms are picked out certain physical structures in the world. But, for our purposes, let's just assume we have some spacetime worms, and take that as our starting point.
2. Even given that one has selected some spacetime worms, isn't it the case that they contain many sub-worms (e.g., imagine my worm, but with a few particles removed)—and so that there are a great many more objects in the world than we might like to think? This is a problem in itself—called the *problem of the many* (see e.g. SEP for a good discussion—but again we'll just set it aside here).
3. One might wonder how the endurantism/perdurantism debate, and discussions of identity more generally, carry across to cases of fissioning objects (James F's question was about this.) This is a tricky business which first-years will explore in General Philosophy; see also ch. 10 of David Wallace's book, *The Emergent Multiverse*.

So: focus on a particular spacetime worm. Don't worry about how to identify worms to start off with, or about the problem of the many, or about what happens when they fission. Then: engage with the endurantism/perdurantism debate from this starting point. Eventually, we might wish to return to these three issues, but we'll do that later.

## Chapter 2: Against presentism

If presentism (the view that only the present exists) were true, then four-dimensionalism wouldn't be able to get off the ground. So Sider is going to argue against presentism in this chapter. Before we start, though, we should note that Sider draws near the start of this chapter an important analogy between temporality and modality—we should pause to discuss this.

### The analogy with modality

*Modality* concerns the notions of necessity, possibility, contingency, and counterfactual reasoning. Typically, philosophers understand these modal notions in terms of possible worlds, so they say things like:

1. 'Necessarily  $P$ ' means that  $P$  is true in all possible worlds.
2. 'Possibly  $P$ ' means that  $P$  is true in at least one possible world.
3. 'Contingently  $P$ ' means that there is at least one possible world where  $P$  is true, and at least one possible world where  $P$  is false.
4. 'If  $P$  were the case, then  $Q$  would follow' means that, in the closest possible world in which  $P$  is true,  $Q$  is true.

What is the ontological status of these possible worlds? I.e., do they really exist? The obvious thing to say is that they don't: only the actual world exists. This view is sometimes called 'actualism'. By contrast, some (most infamously David Lewis, in his *On the Plurality of Worlds* (1986)) argue that *all* possible worlds are just as real as the actual world. This second view is sometimes called 'modal realism'.

Sider (pp. 11-12) writes that "Presentism is analogous to modal actualism, according to which reality consists only of actuals." That is, saying that only the present things exist is equivalent to the modal case of saying that only actual things exist. Similarly, eternalism is analogous to modal realism: that is, saying that things at all times (whether past or present or future) exist is analogous to saying that all possible things exist.

**Question:** Why do you think that more people find eternalism compelling than find modal realism compelling?

## Two other debates

In addition to the debate regarding the ontology of time (which we introduced last week), there are two others:

1. Do tensed facts exist? (E.g.: Is it an objective fact about our being here right now that it's present? Is it an objective fact about my birth that it's in the past?) [This is the 'A-theory'/'B-theory' debate.]
2. Does time 'flow'? (By which is meant: given that there are tensed facts, do they change over time?)

Note that one needs to say that tensed facts exist in order to get presentism and the growing block view off the ground—and also to get the idea that time 'flows' off the ground. This is because all of these views presuppose that there's an objective past/present/future distinction. (Those who don't believe in the existence of objective tensed facts might try instead to treat them like indexicals, like 'here' and 'I'. Then, the truth of a claim like 'My birth is in the past' depends upon the time of utterance, just like the truth of 'I'm in Pembroke' depends upon who's uttering it.)

One can mix together commitments in these debates in various ways. For example, a 'moving spotlight theorist' is an eternalist who believes in objective tense. As Sider writes on this,

*... some eternalists also reject the reduction of tense. According to one such view, reality consists of the four-dimensional manifold accepted by the B-theorist, with an equally real past, present, and future. But one slice of the manifold enjoys a special metaphysical privilege: it is the present. (Sider p. 17)*

## Sider's critiques of presentism

With all of this background on the table, Sider then presents a number of criticisms of presentism. I'll just summarise them here:

1. (*Cross-time spatial relations*) Consider the sentence "Some American philosophers admire

some ancient Greek philosophers." What are the relations of these cross-time relations, for the presentist?

2. (*Truthmakers*) Consider the sentence: "The following used to be the case: dinosaurs exist." In virtue of what is this true (i.e., what are the *truthmakers* of this claim), on a presentist ontology? (Sider p. 36: "The thought is that it is illegitimate to postulate truths that 'float free' of the world. At first glance it would appear that the presentist's tensed truths float free of the world".)
3. (*Tension with special relativity*) Presentism presupposes that there's a fact about which events are simultaneous. This is undermined by Einstein's special theory of relativity. (I will explain!)