

***Four Dimensionalism*—Reading group 1**

Sider's book concerns the notion of *identity over time* (in philosophers' jargon: *diachronic identity*): what does it mean for something, or someone, to be the same entity as something, or someone, at another time? For example, what does it mean for baby-me to be the same person as twenty-something-me?

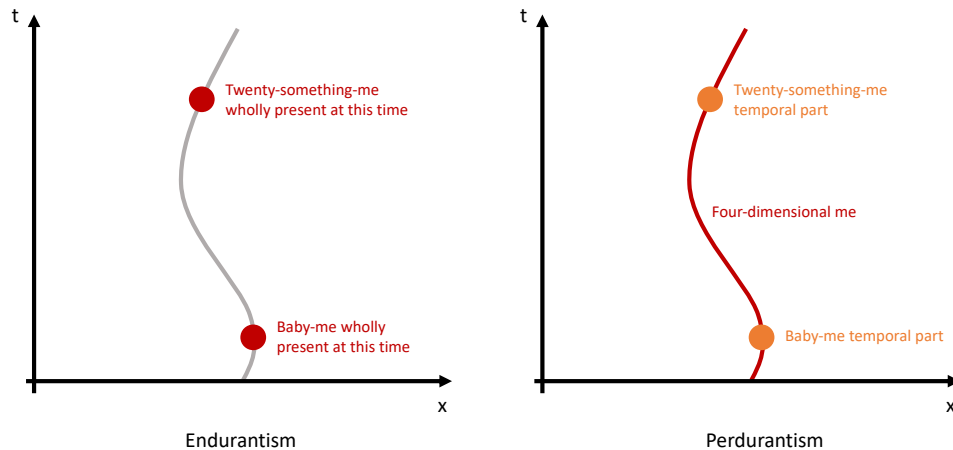
Naïvely, we might say that I'm the same person as baby-me. But the issue with this is that it is in conflict with the following very plausible principle:

Leibniz's Law: If two things are, in fact, the same thing (i.e., numerically the same), then they have all the same properties.

Saying that I'm the same person as baby-me involves the claim that numerically identical objects can have different properties, and so involves a denial of Leibniz's Law. For many this is too much—in which case, we need a different account as what it means for me to be 'the same person' as baby-me.

Sider proposes and defends in *Four Dimensionalism* an alternative: (drum roll..) *four dimensionalism*! According to this, objects are four dimensional 'spacetime worms'; at any particular time, only a part (a *temporal part*) of the object is present. This avoids the above issues, because we're no longer committed to a particular temporal part of four-dimensional-me (i.e., baby-me) being numerically the same as another particular temporal part of four-dimensional-me (i.e., twenty-something-me).

The first of the above two positions—the one which is in tension with Leibniz's law—is known as *three dimensionalism*, or *endurantism*. To repeat: objects on this view are three-dimensional entities, and are wholly present at any particular time. The second of the above two positions—Sider's preferred position—is known as *four dimensionalism*, or *perdurantism*. Objects on this view are not wholly present at a particular time.



Even though perdurantism is less intuitive than endurantism, Sider thinks that the view has several advantages in addition to sidestepping any tension with Leibniz's Law (as we've already seen). In this chapter, he mentions two more, which we'll now consider.

Statue and Lump

Consider a lump of clay: call it Lump. A sculptor takes Lump and moulds it into a statue: call that statue Statue. There's a problem here for the endurantist; here's how Sider puts it:

Lump and Statue seem to be one and the same object. But if they are to be identical, Leibniz's Law requires them to share all of their properties. Lump and Statue do share many properties: they have the same mass, the same shape, the same location, and are all made up of subatomic particles. But if we turn our attention to historical properties, we find differences. Since the statue was created on Tuesday, it did not exist on Monday, but the lump did exist on Monday. Therefore, Statue \neq Lump, since only Lump has the property existing on Monday. But how can this be? How can there exist two things as exactly alike as Lump and Statue? The portion of space in which each is located does not contain room for two such objects. (Sider pp. 5-6)

On perdurantism, there's no great issue here: Lump and Statue are now construed as distinct

four-dimensional objects; they happen to share temporal parts at the particular time under consideration. But we're not committed to there being two objects wholly present at a particular time.

The ship of Theseus

Consider The Ship of Theseus, made of planks. Surely a ship can survive a single plank's replacement. But imagine replacing The Ship of Theseus's planks one by one until all the original planks are gone, and christen the final ship 'Replacement'. ... But now imagine that each plank removed during this process was saved in a warehouse. After enough planks are accumulated, we began assembling them into a new ship ... which we christened 'Planks'.

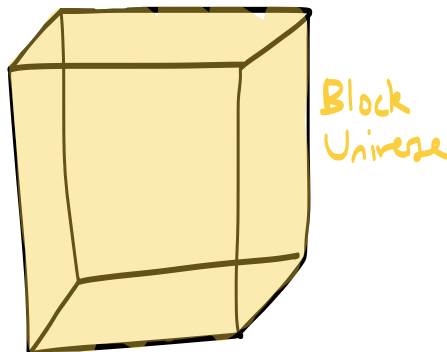
We now face a difficult question: which ship is the same ship as the original Ship of Theseus? (Sider pp. 6-7)

Perdurantist solution: there are just two different spacetime worms, both of which start with the three-dimensional Ship of Theseus, but one of which ends up at Replacement, and the other of which ends up at Planks.

Glance ahead: the metaphysics of time

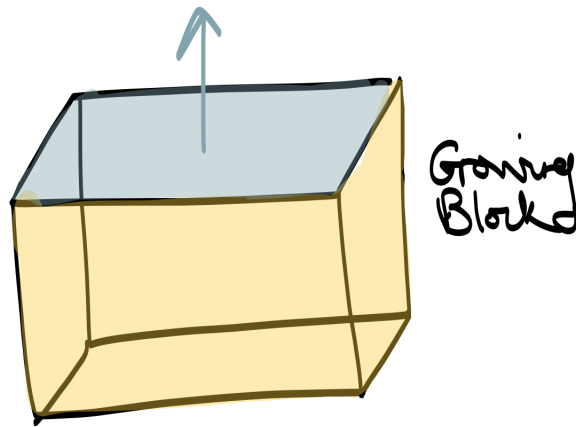
Anticipating the next chapter, let me introduce briefly a central debate regarding the *metaphysics of time*.

Position 1: *Eternalism* holds that past, present and future events are all equally real.



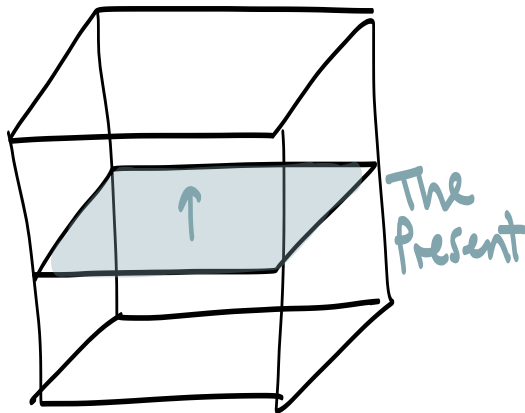
Reality is a four-dimensional *block universe* (time is the fourth dimension here). All events that have ever happened or will ever happen are equally real.

Position 2: Advocates of the *growing block* hold that the past and present are real, but the future is not.



Reality is four-dimensional, but the four dimensional block grows over time.

Position 3: *Presentism* holds that all that exists is what exists now.



Reality is three-dimensional, and changes in time; the past and future are unreal.