0 Terminology

Presentism: Only present objects (and times) exist.
Eternalism: Past and future objects (and times) exist as well.

Three-dimensionalism: Ordinary objects are three-dimensional.
Four-dimensionalism: Ordinary objects are four-dimensional.
(We will associate with 4D the doctrine that objects have temporal parts.)

Endurantism: Objects persist by being wholly located whenever they exist.
Perdurantism: Objects persist by having temporal parts that exist at different times.

Let's call the combination of presentism, 3D, and endurantism collectively the "3D Theory." Call the combination of eternalism, 4D, and perdurantism "4D Theory."

- 3D Theory and 4D theory are not the only ways to combine the views above, but they are the most natural.

1 The Problem of Temporary Intrinsics

Recall the Identity of Indiscernibles, the uncontroversial doctrine: If *a* is identical to *b*, then for every property of P, *a* has P if and only if *b* has P.

The Problem of Temporary Intrinsics:

- Consider the very ordinary scenario where Ted is standing (straight) at time t1, and then is sitting (bent) at t2. Call the person at t1 Ted1 and the person at t2 Ted2.
- Ted1 and Ted2 have different properties – that is, Ted1 has a property that Ted2 lacks, the property of being straight-shaped.
- So by the Identity of Indiscernibles, Ted1 ≠ Ted2.

Both 3D Theory and 4D Theory want to say that Ted persists through time, and so Ted = Ted1 and Ted = Ted2. By Ted1 ≠ Ted2 above and the transitivity of identity, we get a contradiction. But both will deny Ted1 ≠ Ted2.

Assumptions:

1. Ted persists through time – that is, he exists at t1 and t2, and Ted = Ted1 = Ted2.
2. Being straight-shaped is incompatible with being bent-shaped.
3. Shapes are *intrinsic* properties of objects – that is, they are properties that objects have that don't depend on their relations to any objects external to them.
4. Ted himself has the straight shape.

The 4D Theory Solution

- Ted is a 4D object, so it is not that Ted himself has the property of being straight and the property of being bent – rather, he himself has a temporal part that has the property of being straight, and the property of being bent. But these are distinct temporal parts, so there is no contradiction.
- Furthermore, Ted = Ted1 = Ted 2. This is because Ted1 and Ted2 were introduced as persons, so both names refer to the entire worm.

Problem

- The "No Change" objection: In a nutshell, *this isn't real change*!

The First 3D Theory Solution

- There is no such thing as straight *period* and being bent *period*. Rather, there is only being straight-at-a-time and being bent-at-a-time. That is, seemingly intrinsic properties like shape are really *extrinsic*, or relational properties, since they involve a relation to a time.
- The problem disappears because Ted1 and Ted2 do not have incompatible properties. Rather Ted has the properties of being-straight-at-t1 and being-straight-at-t2, and Ted = Ted1 = Ted2.

Problem

- According to Lewis, "If we know what shape is, we know that it is a property, not a relation."
    - That is, being a certain shape is structurally a very different property from e.g. being an uncle. Being an uncle entails the existence of something extrinsic to the object in question. Namely, the object that is an uncle requires a niece or nephew.
- Ted's reply on behalf of the First 3D Theory Solution: We still have a principled way of distinguishing between properties like being straight and being an uncle, even if both are extrinsic. In particular, the first involves relations to times rather than concrete particulars.

The Second 3D Theory Solution

- It's never the case that Ted is both straight and bent, period. Rather, Ted *is* straight and *will be* bent, or *is* bent and *was* straight, depending on what's going on now. These are not incompatible properties.
- So Ted = Ted 1 = Ted2.

Problem

- This solution assumes that presentists can refer to times that no longer exist (or have yet to exist).